



Cornell University Announcements

*1971 Summer Session*



Cornell University

*Summer Session*  
*1971*

SUMMER SESSION OFFICE

The office of the Summer Session is in room B-20 Ives Hall; the telephone number of the office and of the dean is 256-4987. The office will be open from 8:00 A.M. to 4:30 P.M. Monday through Friday and from 8:30 A.M. to noon on Saturdays during the period of the Summer Session. Martin W. Sampson is dean.

CORNELL UNIVERSITY ANNOUNCEMENTS

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The courses and curricula described in this *Announcement*, and the teaching personnel listed herein, are subject to change at any time by official action of Cornell University.

BE SURE TO BRING THIS *ANNOUNCEMENT* WITH YOU FOR USE ON REGISTRATION DAY AND THROUGHOUT THE SUMMER SESSION. YOU WILL BE HELD RESPONSIBLE FOR BEING FAMILIAR WITH ALL ITEMS OF INFORMATION AND REGULATIONS IN THIS *ANNOUNCEMENT* WHICH APPLY TO YOUR PARTICIPATION IN THE SESSION.

AN APPLICATION FORM IS IN THE  
BACK OF THIS *ANNOUNCEMENT*

## Calendar of the Summer Session

June 29	Tuesday	Living units open for occupancy.
June 30	Wednesday	Summer Session registration in Barton Hall, 8:30-11:00 A.M. and 1:00-3:30 P.M.
July 1	Thursday	Classes begin. Late registrants report to the Summer Session office, B-20 Ives Hall. Persons registering without prior approval must pay a \$10 late registration fee.
July 2	Friday	Last day for withdrawal from the Summer Session without payment of a fraction of tuition and fees.
July 5	Monday	All classes will be in session.
July 6	Tuesday	Last day for payment of tuition and fees at the Treasurer's Office, which closes at 4:30 P.M.
July 12	Monday	Last day for making any changes in registration without payment of a fee. A \$10 fee will be charged after this date.
July 21	Wednesday	Last day for making changes in registration except for reasons beyond the control of the student.
July 23	Friday	Last day of first three weeks of Summer Session.
July 26	Monday	Registration for the second period of any three-week unit course elected by students not previously registered, at the Summer Session office, B-20 Ives Hall.
August 12	Thursday	Final examinations begin. See schedule on p. 33.
August 13	Friday	Summer Session ends, 4:00 P.M.
August 14	Saturday	All living units close at 2:00 P.M.





# Cornell University

## GENERAL INFORMATION

### The University

Founded in 1865 by Ezra Cornell and Andrew D. White, Cornell University, youngest member of the Ivy League and an arm of the State University of New York, comprises seventeen undergraduate and graduate academic units. Its curriculum encompasses most major segments of education. The years since it was founded have seen tremendous growth and many changes, yet the principles of diversity and intellectual freedom upon which the University was founded, still exist today.

Cornell is big, but not mammoth. Its campus, spreading over 740 acres, contains ninety major buildings which house classrooms, laboratories, libraries, and residence halls. Its potential for growth can easily be seen by the additional buildings now being constructed.

Cornell's more than 15,000 students are as diverse as the university they attend, coming from every state in the nation and 89 foreign countries. Similarly, its outstanding faculty, numbering about 1,800, is drawn from many different locales.

### The Town

Ithaca is a town of character and charm, ringed by rolling hills and laced with deep gorges. Situated at the southern end of Cayuga Lake, it serves as the county seat for Tompkins County, an essentially rural area. Education is a major industry in Ithaca with two well-known educational institutions facing each other across the valley—Cornell University on East Hill and Ithaca College on South Hill. Together they provide cultural and recreational opportunities that help make the city an interesting and stimulating place to live.

When summer comes to Ithaca the people come too, since this is a choice vacation spot in the famed Finger Lakes Region of west central New York State. Cayuga Lake, one of the largest of the Finger Lakes, attracts many water skiers and boat enthusiasts. Ithaca Falls, tumbling

down Fall Creek Gorge, is a favorite spot of camera buffs. Golfers have a choice of four courses in the area, and for swimming, picnics, boating, and spectacular scenery, residents and visitors alike can go to the three state parks close by. Many picturesque restaurants dot the countryside and range from an old gabled country inn to one located in the former city railroad station. Ithaca offers the unique combination of a cosmopolitan atmosphere in a rural setting.

## The Summer Session

While the student population is considerably smaller in the summer, it is still as diverse in origin. The Summer Session of 1970 brought over four thousand students to the campus from forty states and thirty-six foreign countries. The 1971 Summer Session offers over three hundred credit courses and more than forty Special Programs for groups of varying sizes and interests. Unlike the academic year, the summer population ranges from the high school junior taking advanced placement courses to the business executive enrolled in a Special Program.

The course offerings in the regular six-week Summer Session are available to college-bound secondary school seniors, undergraduate and graduate degree candidates, teachers, and other persons interested in personal or professional improvement. The summer schedule is planned in cooperation with the faculties of the various schools and colleges, with particular regard for courses that can be taught successfully in a short term and in a summer environment. The same standards of instruction and academic performance are maintained as those of the academic year.

Summer is for enjoyment as well as for study and there is a full schedule of concerts, lectures, plays, art exhibitions, films, and folk and square dancing. For the more energetic, there is an eighteen-hole golf course, tennis and squash courts, two indoor swimming pools, and gym facilities. The trails down the two deep gorges which cut through campus attract many walkers, as does Sapsucker woods, the 180-acre bird sanctuary northeast of the main campus. Summer at Cornell can be a most rewarding experience.

## Admission

It is the policy of Cornell University to actively support the American ideal of equality of opportunity for all, and no student shall be denied admission or be otherwise discriminated against because of race, color, creed, religion, or national origin.

Admission of undergraduate or graduate students to the Summer Session establishes no priority with respect to admission to the regular academic terms. Students seeking admission to Cornell undergraduate colleges should apply directly to the Office of Admissions, 247 Day Hall. Information on admission to the Graduate School can be found on pp. 15-17.



Students are eligible for admission to the Summer Session in the following categories:

## UNDERGRADUATES

Persons who are candidates in good standing for a Bachelor's degree; or precollege secondary school graduates who have been accepted for admission to an accredited college or university. No other secondary school students will be accepted except in certain Special Programs of the Summer Session, described on pp. 72-93.

## GRADUATES

Candidates for advanced degrees either at Cornell University or other colleges or universities. For information on residence credit for Cornell graduate students, see pp. 10, 16.

## SPECIAL STUDENTS

Teachers and members of the general public who are not candidates for academic degrees are eligible for admission to the Summer Session to take courses to meet certification requirements, for personal interest, or for professional improvement. Secondary school students who do not classify as "undergraduates" (see above) are not eligible for admission as special students.

College students who have been suspended or dropped from their college or university are not eligible for admission as special students until at least one year after the date of their suspension or separation.

## 10 ADMISSION

**AUDITORS.** A graduate or special student who wants to attend a course or courses but does not want credit, may register for such courses as an auditor. Undergraduate students are not permitted to register for audit.

Auditing a course requires regular attendance in class and completion of all work required except the final examination. The audited course will appear on the student's record unless he is a student in the Cornell University Graduate School; in this case, no record of the audited course will appear. Tuition and fees will be charged at the same rate as for credit.

### APPLICATION FOR ADMISSION

Admission to the Summer Session is gained through formal application. The application form and instructions are included in the back of this *Announcement*. All parts of the form pertaining to the student who is applying must be filled out in full. A \$10 nonrefundable application fee is required of all students, except Cornell undergraduate and graduate degree candidates, and must accompany the application for admission. Checks should be made payable to Cornell University. Applications will be accepted up to registration day. However, notification of acceptance to register will not be sent for applications received after June 22. Late applications are welcomed but obviously the risk of finding course enrollment filled is greater.

### APPLICATION TO SPECIAL PROGRAMS

Applicants for admission to the Special Programs of the Summer Session do not use the form referred to above. Each program has a separate application form which is obtained by request from the director of that program. See descriptions of Special Programs, pp. 72-93.

### CREDIT TOWARD DEGREES

A graduate or undergraduate degree candidate from a college or university other than Cornell University should consult the appropriate official, either in the college to which he has been admitted, or where he is now matriculated, for advice in planning his summer study program. This is important in order to assure that the credit he earns will be accepted toward his degree program. Credit for courses in the Summer Session is comparable to credit for courses offered during the academic year at Cornell.

### CREDIT TOWARD DEGREES AT CORNELL UNIVERSITY

A Cornell graduate degree candidate may seek residence credit toward a degree in the amount of two-fifths of a unit for a program of six or more credit hours in the Summer Session. Request for residence credit is made to the Graduate School and must be supported by the student's

Special Committee. See pp. 16-17 for further information regarding the Graduate School.

A Cornell undergraduate degree candidate, or a student accepted for fall admission as an undergraduate of Cornell University, will be admitted to the Summer Session only after the appropriate officer from the following list has approved and signed his application for admission.

College of Agriculture: Professor J. P. Hertel

College of Architecture, Art, and Planning: Dean Burnham Kelly, Associate Dean Stuart Stein, Professors O. M. Ungers, John P. Shaw, Jason Seley

College of Arts and Sciences: Associate Dean A. J. Cheney

College of Engineering

Basic Studies: Professor H. G. Smith

Chemical Engineering: Professor K. B. Bischoff

Civil Engineering: Professor Walter R. Lynn

College Program: Professor William H. Erickson

Electrical Engineering: Professor J. L. Rosson

Industrial Engineering: Professor B. W. Saunders

Materials Science and Engineering: Professor H. H. Johnson, Mr. L. W. VanDuzer

Mechanical Engineering: Professor D. G. Shepherd, Mr. R. L. Jewett

Engineering Physics: Professor T. R. Cuykendall

School of Hotel Administration: Dean R. A. Beck, Assistant Dean G. W. Lattin, Miss Edna M. Osborn

College of Human Ecology: Mrs. Joyce McAllister

School of Industrial and Labor Relations: Assistant Dean D. P. Dietrich

Division of Unclassified Students: Professor M. W. Sampson

## Grades

All courses are reported on the basis of letter grades: A+ through D- and F (failure).

Description of various performance levels:

- |          |  |
|----------|--|
| A- to A+ | Very good to excellent: comprehensive knowledge and understanding of subject matter, marked perception and/or originality.           |
| B- to B+ | Good: moderately broad knowledge and understanding of subject matter, noticeable perception and/or originality.                      |
| C- to C+ | Satisfactory: reasonable knowledge and understanding of subject matter, some perception and/or originality.                          |
| D- to D+ | Minimal: bare minimum knowledge and understanding of subject matter; severely limited perception and/or originality; "failing" work. |

## 12 GRADES

**F** Unsatisfactory: unacceptably low level of knowledge and understanding of subject matter; no perception and/or originality.

Exceptions to above:

1. Auditors will not receive grades. See p. 10.
2. S-U grading (Satisfactory-Unsatisfactory) may be used for students registered for research or other individual work, and in certain courses so designated by the instructors at the beginning of the summer term. In courses where optional grading (S-U) is permissible, the instructor will report the names of students who have been granted permission to be graded on this basis to the Summer Session Office before the end of the second week of classes. Cornell undergraduate students must also obtain the approval of their school or college official (see p. 11).

Grade reports will be mailed to the home address of all Summer Session students as soon after August 30 as they are received. Copies of the grade slips will automatically be sent to the school or college offices of Cornell undergraduate and graduate degree candidates. *Grades will not be given over the telephone under any circumstances.*

## TRANSCRIPTS

Students needing transcripts of their Summer Session record should request them from the Office of the Registrar, 240 Day Hall. A \$1 fee is required for each copy.

## INCOMPLETES

If a student is prevented, for medical or other reasons acceptable to the instructor, from completing the work in any course before the last day of the session, he may request the instructor to report his grade as "INC" (incomplete). It is the student's responsibility to make specific arrangements with his instructor to complete the course work and have the grade reported to the Summer Session office. A mark of "F" (failure) will become the final recorded grade for the course if work is not completed by January 15, 1972. If the course is completed within the time allowed it will appear twice on the record in the office of the Registrar, with both "INC" and the final mark being recorded. Satisfactory completion of the course does not eliminate the original "incomplete" designation.

## WITHDRAWAL FROM THE SUMMER SESSION

A student may apply for withdrawal at any time by appearing in person at the Summer Session office. Any student who withdraws from the six-week session will be charged tuition and the general fee at the rate of 25% per week, or fraction of a week, from the registration day to the effective date of withdrawal. No tuition and general fee will be charged in the six-week session if withdrawal is made by Friday, July 2.

Students who withdraw after July 2 may, upon proper application, receive a refund of tuition and the general fee in accordance with the following schedule.

Withdrawal Dates	% Refunded
July 3- 6	75%
July 7-13	50%
July 14-20	25%
July 21 and after	0%

Approval of withdrawal requires the surrender of the student's Official Registration Certificate and all privileges it provides as of the date withdrawal is granted. A grade of "F" (failure) will automatically be recorded for all courses in which a student is enrolled if he withdraws without officially notifying the Summer Session office.

## Registration

Registration material will be mailed to all persons who have filed a satisfactory application for admission prior to June 22. Applications will be accepted up to registration day but registration material will not be mailed out after June 22. A \$10 fee must accompany the application for admission of all students except Cornell undergraduate and graduate degree candidates (see p. 10). The registration material will consist of the following:

- (1) A set of registration coupons (blue designates undergraduate students; white, graduates and special students). The coupon marked "certificate of admission" will contain the time of day the student is to appear to register at Barton Hall on Wednesday, June 30. Each student may partially complete the registration coupons (except for the courses of study) and should take them with him (intact) when he appears to register. The coupons should not be torn apart.
- (2) A brochure containing information about available living accommodations and an application for reservation of residence hall space. This should be filled out immediately and mailed to the Student Housing Services, 223 Day Hall, with a deposit of \$20 (which is applied toward the residence charge). Checks should be made payable to Cornell University. For more detailed information see pp. 18-21.
- (3) A letter from the Safety Division explaining automobile regulations and an IBM card to be completed at registration time. Each student should read the letter carefully and take both it and the IBM card with him to registration. For further information, see p. 23.
- (4) A Campus Guide, which contains a detailed map of the campus and surrounding area with names and locations of the buildings on campus.

Registration will take place on Wednesday, June 30, at Barton Hall from 8:30 to 11:30 A.M. and from 1:00 to 3:30 P.M. Directions for regis-

## 14 TUITION AND FEES

tration procedures will be issued at the entrance. Students who have not received their registration material, but who have filed an application for admission, should report to the admissions table; students who have not filed an application for admission are to report directly to the information table at Barton Hall.

### REGISTRATION IN UNIT COURSES

Unit courses are indicated by a *u* immediately following the course number, and are less than six weeks in length.

Unit courses in the regular Summer Session are three weeks in length and are held from June 30 to July 23 and from July 26 to August 13. Students registering for a unit course held in the first three weeks of the Summer Session will register at Barton Hall on June 30, the regular registration day. Students registering only for a unit course offered in the last three weeks of Summer Session will register at the Summer Session office, B-20 Ives Hall, on July 26 at a time of day that does not interfere with their attendance in class.

Students registering for unit courses in the Special Programs of the Summer Session (see pp. 72-93) will register *at the first class meeting of the course* at the time and place indicated on their registration material.

## Tuition and Fees

Tuition and fees are due and payable at the Treasurer's Office in Day Hall on June 30, registration day. The last day for payment without a penalty is Tuesday, July 6. The Treasurer's Office closes at 4:30 P.M. A penalty of \$10 will be charged if payment is made after this date.

### TUITION

The rate of tuition is \$70 per credit hour. Tuition is charged according to the number of credit hours for which the student is registered. Students registered in the Summer Session, who are permitted to elect one or more courses from a Special Program (see pp. 72-93), will be charged at the rate of \$70 per credit hour.

### FEES

**Application Fee**—\$10 (nonrefundable) must accompany application for admission. (Does not apply to Cornell undergraduate and graduate degree candidates.)

**General Fee**—\$5 per week. Charged in addition to tuition and must be paid by all students except Cornell graduate students who were registered during the previous spring term.

**Course Fees**—An asterisk (\*) preceding the course number indicates that fees for laboratories, field trips, and incidental expenses are charged. The amount of the fee immediately follows the course description.



**Late Registration Fee—\$10.** Persons who fail to appear to register on June 30 will be charged a late registration fee of \$10 unless the fee is to be waived by prior approval of the dean of Summer Session. If a student knows that circumstances beyond his control will prevent him from registering at the specified time, he should write to the dean of the Summer Session explaining the circumstance, and requesting permission to register late without payment of the late fee.

**Change in Registration Fee—\$10.** Changes in registration made after July 12 will be approved only upon payment of a \$10 change of registration fee.

**CHANGE OF REGISTRATION** includes cancellation of a course, change from one course to another, change from undergraduate to graduate level credit or vice versa, addition of a course to a program, change in credit hours, or change from credit to auditor status or vice versa. No change in registration is official unless made by appearing in person at the Summer Session office, B-20 Ives Hall. Except for reasons beyond the control of the student, no change in registration will be permitted for the Summer Session after 4:00 P.M. on July 21.

When a change in registration involves enrollment in another course or change in credit status, permission of the instructor of that course is necessary before a change can be made. A Cornell undergraduate must also obtain permission to make the change from the official of his school or college who originally signed his application for admission. See p. 11.

**GRADUATE REGISTRATION FEE.** Applicants accepted for admission to the Graduate School as well as to Summer Session who have not matriculated previously at Cornell must pay a fee of \$35 to the Graduate School in addition to the regular tuition and fees as required by the Summer Session. The Graduate School fee is used to pay the matriculation costs and covers certain expenses incidental to graduation if the student receives a degree. The fee is nonrefundable.

For other information concerning Graduate School regulations, see pp. 10, 16-17.

## OTHER REGULATIONS AND FEES CONCERNING PAYMENTS

Any student, graduate or undergraduate, who fails to pay his tuition, fees, and other indebtedness at the Treasurer's Office within the time prescribed by the University, will be dropped from the University. When, in his judgement, the circumstances in a particular case so warrant, the treasurer may allow an extension of time to complete payments. For such an extension, the student will be assessed a fee of \$5. A reinstatement fee of \$10 will be assessed any student who is permitted to continue or return to classes after being dropped from the University for default in payments. For reasons satisfactory to the treasurer and the registrar, which must be presented in writing, the latter assessment may be waived in any individual case.

*The amount, time, and manner of payment of tuition, fees, or other charges may be changed at any time without notice.*

**CASHING OF CHECKS.** The treasurer of the University accepts checks drawn on banks in the United States in settlement of charges payable at his office, but a rule of the Board of Trustees forbids him to cash any credit instrument, even to the extent of accepting a check or draft in an amount greater than the sum due and returning the excess in cash. Students therefore are advised to open an account in an Ithaca bank as soon as they arrive in town, or else provide themselves with travelers' checks, drafts on New York City banks, money orders, or other forms of credit instruments which a bank will cash in the ordinary course of business.

Checks for amounts of \$25 or less may be cashed at the main desk in the lobby of Willard Straight Hall upon presentation of the student's certificate of admission to the Summer Session. (See p. 25.)

## The Graduate School

The Graduate School is an administrative unit entirely separate from the administration of the Summer Session. *Only candidates for advanced degrees at Cornell University are registered with the Graduate School in the summertime.* Students who take course work at the graduate level in the Summer Session but who are not candidates for advanced degrees at Cornell University have no connection with the Graduate School.

### CREDIT FOR ADVANCED DEGREES

Summer Session credit may be used for partial fulfillment of residence requirements for the following advanced degrees, under regulations of the faculty of the Graduate School, and with prior approval of the candidate's Special Committee: Master of Arts (M.A.); Master of Science (M.S.); Master of Science for Teachers (M.S.T.); Master of Arts in Teaching (M.A.T.); Master of Fine Arts (M.F.A.) [only in English]; Master of Industrial and Labor Relations (M.I.L.R.); Doctor of Education (Ed.D.); and Doctor of Philosophy (Ph.D.).

When the candidate has registered in both the Summer Session and the Graduate School, a minimum of six hours in the six-week session will count as two-fifths of a residence unit if approved in advance and reported as acceptable by the student's Special Committee.

Requirements for Master's degrees may, upon approval of the General Committee of the Graduate School, be completed solely during the summer period if instruction in the chosen major and minor subject is offered. Only two residence units for study in the Summer Session may be accepted in fulfillment of requirements for the doctorate. Upon recommendation by the Special Committee of a student and on approval by the dean of the Graduate School, residence may be transferred for study in one preceding Cornell Summer Session period if such study is attested to be an integral part of the graduate program subsequently undertaken.

## ADMISSION

Students intending to become candidates for advanced degrees at Cornell should write to the dean of the Graduate School, Sage Graduate Center. If an *Announcement of the Graduate School* is also wanted, the major field of concentration should be stated. A zip code must be included with the applicant's address. Applications for admission to the Graduate School received prior to May 1 will be acted upon in time for the accepted candidates to register with the Graduate School and Summer Session on registration day. The Admissions Committee cannot give assurance that an application received after May 1 will receive the same consideration that it would receive if filed before that date.

**REGISTRATION FEE.** On admission to the Graduate School, the applicant is required to pay the sum of \$35 within twenty days of notification of admission, unless he has matriculated previously at Cornell (see p. 15).

## REGISTRATION

*Only students approved for admission in the Graduate School must register with both the Summer Session and the Graduate School. Full information and proper forms for registering in the Graduate School may be obtained from the Graduate School desk at Barton Hall on registration day. The registration must be completed within one week of registration day. To register, each candidate must file a Registration-of-Courses form properly approved by his Special Committee. Each new candidate must file a Nomination-of-Committee form.*

*Such registration is regarded in the same fashion as registration for a regular semester and affects the deadlines for fulfillment of requirements.*

Candidates registered in the Summer Session who were not registered in the preceding spring term but who expect to continue as full-time graduate students in a succeeding fall or spring term must arrange with the dean of the Graduate School for permission to register in the regular term.

## COMPLETION OF REQUIREMENTS

Candidates for advanced degrees who expect to complete requirements and to take their final examinations at the end of the Summer Session should call at the office of the Graduate School not later than the third week of the session for the necessary instructions and forms.

## Financial Aid

There are no general University scholarships available for Summer Session study.

Students registered in the Summer Session are normally not eligible for University financial aid. In special cases, however, when the appli-

cant is a regular full-time student at Cornell and his summer program has the full approval of his faculty adviser, he will be considered for loan assistance. More specific information can be obtained from the Office of Scholarships and Financial Aid, Room 105, Day Hall.

Opportunities for part-time employment during the summer are so limited that students should not rely on this means of financing any part of their Summer Session expenses. An application for part-time summer employment can be obtained by contacting the Personnel Department, B-17 Ives Hall, or by writing to the Office of Scholarships and Financial Aid, Room 105, Day Hall.

## Counseling Services

### OFFICE OF THE DEAN OF STUDENTS

The Office of the Dean of Students, Barnes Hall, has a trained staff available for conferences with students concerning on-campus and off-campus housing; student activities and organizations; selective service information; and any other matters of personal, educational, and social concern to individual students and student groups.

### INTERNATIONAL STUDENT OFFICE

The International Student Office, 200 Barnes Hall, maintains a staff prepared to assist all students from other countries who may need information about living quarters, immigration matters, personal and social problems, or other questions.

## Housing and Dining

### HOUSING

Rooms are available in University-operated housing units for graduate and undergraduate men and women registered in the six-week Summer Session. A leaflet giving detailed information on housing, *Single Student Housing*, will be mailed by the office of the Summer Session after admission has been approved. Rooms are furnished with desk, deskchair, desk lamp, bookcase, chest of drawers, bed linens (laundered by the University), blankets, and bedspread. Bed linens are exchanged weekly. Daily room care, including bedmaking, is the responsibility of the occupant. The occupants furnish their own towels and soap.

Students registered in any program of the Summer Session who withdraw before the program is completed must terminate their occupancy of University-operated housing facilities, and they must officially notify the office of the Summer Session of their intent to withdraw.

Students may make application for single or double rooms in University residence halls if they desire. The rates for the six-week Summer Session are \$83 for single occupancy and \$63 for double



*Observation Room, Sapsucker Woods Ornithology Laboratory*

accommodations. For periods of three weeks or less, the rates are \$15 single and \$12 double occupancy per person per week or part of a week. All rates cover cost of room only.

There is a head resident in each hall who, in cooperation with the staff of the Office of the Dean of Students, is concerned with the general welfare of the students.

Meals can be obtained at the campus public service dining units.

## OPENING AND CLOSING DATES

Living units to be used during the six-week Summer Session will open for occupancy on Tuesday, June 29; they will close at 2:00 P.M. Saturday, August 14. *Earlier or later occupancy will not be possible under any circumstance.*

## APPLICATION FOR ROOMS

An application for a room assignment in a residence hall cannot be given consideration unless it is submitted on an official application form to Student Housing Services, 223 Day Hall. Room application forms are distributed *only* by the office of the Summer Session *after* admission has been approved, and each student will automatically receive one with his Summer Session registration coupons.

## ASSIGNMENTS

Assignments are made in order of receipt of application, and the earliest mailing date will be approximately May 15. Since requests for the six-week session must take precedence over those for shorter periods, it may be impossible to forward actual assignments until ten days prior to short course registrations.

## ROOM DEPOSITS

A \$20 room deposit is required. A check or money order, drawn to the order of Cornell University, should be attached to the room application to ensure prompt action. *This deposit is applied towards the residence charge.* Room deposits which accompany room applications will be refunded to those students who file written intention to withdraw the application with the Student Housing Services, 223 Day Hall, provided such notice is received by June 15. *The deposit will not be refunded on cancellations received after June 15.*

## MARRIED STUDENTS AND OFF-CAMPUS HOUSING

Many of the houses, apartments, and rooms currently available for rent in Ithaca and vicinity are posted in the Off-Campus Housing office, 223 Day Hall. This office, which functions as a bureau of information only, maintains files of accommodations listed voluntarily by landlords

for students and staff members who call at the office. Because the availability of accommodations is constantly changing, it is not possible to compile or mail listings, nor is it feasible to maintain a waiting list of persons seeking accommodations.

Students wishing to sublet houses or apartments off campus, or married student apartments operated by the University on campus, are advised to arrive in Ithaca in advance of registration in order to secure such quarters. Sublet rentals for the Summer Session range from \$65 to \$175 per month.

There is normally an adequate supply of rooms available in off-campus locations for the Summer Session. These rooms vary considerably in comfort, convenience, and safety. Before leasing a room careful consideration should be given such details as distance from campus and dining facilities, price, ventilation, sanitation, furnishings, and fire escapes. Arrival in Ithaca a few days in advance of registration will assure students of a better selection of off-campus rooms.

Information concerning married student accommodations can be obtained by writing the Married Student Housing Office, Hasbrouck Apartments, Pleasant Grove Road, Ithaca, New York 14850. For information about off-campus housing accommodations, write the Student Housing Services, 223 Day Hall, Cornell University, Ithaca, New York 14850.

## DINING SERVICES

The student union building, Willard Straight Hall, offers complete cafeteria and snack bar service as does Noyes Lodge on Beebe Lake. Other student dining facilities include the student cafeteria in Statler Hall and the Dairy Bar cafeteria in Stocking Hall. Additional facilities may be available according to need. Meals obtained in these places, or in the cafeterias, dining rooms, and restaurants near the campus, will cost approximately \$3.50 to \$4.50 per day.

## Health Services

The University student medical services are available to all students officially registered in the Summer Session as follows:

**FOR REGULAR SIX-WEEK SUMMER SESSION STUDENTS.** (1) Unlimited visits to the Gannett Medical Clinic, 10 Central Avenue; (2) hospitalization at Tompkins County Hospital with medical care for two days for students in the six-week session; (3) emergency surgical care, defined as initial surgical procedures which are necessary for the immediate welfare and safety of the patient.

**FOR STUDENTS REGISTERED IN SPECIAL PROGRAMS.** (1) Same as (1) above for the period of registration; (2) hospitalization based upon length of registration—none if less than three weeks; if more than three weeks, graduated up to fourteen days, the maximum

## 22 SPECIAL REGULATIONS

based on the entire Summer Session of approximately three months; (3) emergency surgical care; same as (3) above except none for students registered for less than three weeks.

If a student elects to consult a private physician, the cost of this service is not covered by the health fee.

*Students who withdraw from the Summer Session terminate health services as of the withdrawal date.*

### CLINIC HOURS

Monday through Friday: 9:00 A.M.—5:00 P.M.

Saturday: 9:00 A.M.—12:00 NOON.

Sunday: 10:00—11:00 A.M.

Physicians are on duty at the above hours except between 12:00 NOON and 2:00 P.M. weekdays. Nurses are in attendance at all times during clinic hours.

### AFTER CLINIC HOURS

On a limited basis, with a nurse in attendance, the Gannett Medical Clinic will also be open from 12:00 NOON to 5:00 P.M. on Saturdays for illness and accidents occurring after regular clinic hours. *These extra hours are not intended for conditions that could be treated during the regular hours.* Should illness or injury occur when the clinic is not open, students should call 272-6962 for instruction. All accidents should be reported to the Safety Division, 256-5211. Extended hours are in effect for the six-week Summer Session.

### EMERGENCY SERVICE

A doctor is always available for calls of an emergency nature when an accident<sup>1</sup> has occurred or when the student is too ill to come to the clinic or the hospital. (In the residence halls these calls should be made by the head resident whenever possible.) Telephone calls for this service should be made through the Gannett Medical Clinic, 256-3493, when the clinic is open (see hours above); to 272-6962 after clinic hours. This service is not designed to care for students in their rooms. A charge of \$5 in the daytime and \$10 at night is made for such calls.

## Special Regulations

### STUDENT CONDUCT

The Summer Session is administered under the same general regulations governing student conduct which apply to all other sessions of the University, with slight modifications to cover the special circumstances of the Summer Session. Students are expected to familiarize themselves

1. Accidents—Call 256-5211 (Safety Division).



with the contents of the Student Code, the Regulations for the Maintenance of Public Order, and the Code of Academic Integrity. The regulations and codes are available at Summer Session registration in Barton Hall and from the Office of the Dean of Students, 133 Day Hall.

The regulations and codes, products of extensive deliberations involving students, faculty, and administration, are statements of standards and regulations necessary to ensure maximum individual freedom and the effective functioning of the University as an educational institution.

In addition, students living in University residences are responsible for familiarizing themselves with the specific rules applying to their places of residence. They may obtain copies of the rules from head residents and resident advisers.

The responsibility for administration of faculty and University Senate policy with respect to student discipline is exercised by the Office of the Judicial Administrator.

## AUTOMOBILE REGULATIONS

The University does not encourage student use of automobiles but recognizes that in certain cases there may be important reasons why a student needs an automobile. Any person registered in a program of the Summer Session who owns, maintains, or, for his own benefit, operates a motor vehicle in Tompkins County must do the following: (1) register the vehicle with the Traffic Bureau of the Safety Division at the time of Summer Session registration, or within five days if brought to Tompkins County after the term begins; (2) display, as directed, a registration sticker; (3) be legally qualified to operate a motor vehicle in New York State; (4) have the vehicle registered in New York State or legally qualified to be operated on the highways of New York State; and (5) have the vehicle properly insured against public liability for personal injury and property damage for the minimum of \$10,000-\$20,000-\$5,000.

Motorcycles and motor scooters must be registered and may not be used on campus during class hours. Trailers, as family units, are not allowed on any University property. Students may not park on campus from 8:00 A.M. to 5:00 P.M. Monday through Friday and from 8:00 A.M. to 1:00 P.M. on Saturday. Parking restrictions are in effect twelve months of the year.

Each student registered for any program in the Summer Session is required to complete the Safety Division IBM card at the time of registration whether or not he has a vehicle. This card is kept on file by the Safety Division. This office is the only one on campus open twenty-four hours a day to which inquiries, in the event of an emergency, can be directed when other sources of information are closed.

The student's registration in the University is held to constitute an agreement on his part that he will abide by its rules and regulations with regard to traffic and parking or suffer the penalty prescribed for any violation of them.

## Libraries

The University libraries on the Cornell campus comprise the Olin Library for graduate study and research, the Uris Library for undergraduate use, the Mann Library of Agriculture and Human Ecology, the Business and Public Administration Library, the Engineering Library, the Fine Arts Library, the Hotel Administration Library, the Library of the School of Industrial and Labor Relations, the Law Library, the Music Library, the Physical Sciences Library, and the Veterinary Library. In addition there are numerous departmental libraries in the separate schools and colleges.

The union catalog, the general collection of reference books and documents, the chief bibliographical publications, and the principal series of academy and learned society publications are located in the Olin Library. Specialized reference materials will be found in the various college, school, and departmental libraries. The Reference Departments of the Olin and Uris Libraries, as well as the library staffs of the college, school, and departmental libraries, are prepared to assist students in the effective use of the libraries and in the location of research materials.

The total library resources on the Ithaca campus exceed 3,700,000 volumes. The number of periodicals, transactions, and other serials currently received is over 50,000.

In the course of their development the libraries have acquired and have built up a variety of special collections. Illustrative of these resources are the University Archives, and collections on the American Civil War, Abolition and Slavery, Apiculture, Botany, China and South-east Asia, Dante, English and French Revolutions, Freemasonry, History of Science, History of Superstition, Iceland, Joyce, Kipling, Pascal, Petrarch, Shaw, Wordsworth, and Regional History.

The privilege of borrowing books for home use is granted to all students who comply with the library regulations. Presentation of the official Summer Session Registration Certificate is required when borrowing books. Stack permits for the Olin and Mann libraries are issued to graduate students. Carrels in the stacks of the Olin, Mann, and Industrial and Labor Relations libraries are also available for assignment to graduate students upon application.

Copy service for library books and periodicals and academically related materials is available in the Olin, Uris, Mann, Physical Sciences, Industrial and Labor Relations, Law, Business and Public Administration, and Engineering libraries. A schedule of the hours for all libraries on campus will be available at Summer Session registration desks and in the *Weekly Bulletin*.

## The Weekly Bulletin and Calendar

The Summer Session *Weekly Bulletin* contains official notices, a schedule of events, and announcements of general interest to Summer Session students and faculty. As the only campus-wide information medium during the summer, it includes the weekly calendar, news items, features, and notes of general interest. The first issue of the *Weekly Bulletin* will be available at registration on June 30 at Barton Hall. The *Bulletin* will be distributed on campus during each of the five succeeding weeks of the Summer Session.

Copies will be available without charge to anyone at the following places: Dairy Bar; Donlon Hall; Noyes Lodge; Martha Van Rensselaer cafeteria; Willard Straight Hall, main desk; Statler lobby, main desk; Summer Session office, B-20 Ives Hall; Risley Hall; University Halls; and Visitor Information Center in Day Hall.

## Extracurricular Activities

The Summer Session, with the cooperation of various departments and agencies of the University, presents a program of public events and recreation designed to enrich the campus experience of its summer visitors. The Summer Arts Festival is again being presented in addition to the regular program of planned activities. For more information about the Summer Arts Festival, see pp. 95-104.

### WILLARD STRAIGHT HALL

The University union building is reserved for the students, faculty, staff, alumni, and guests of Cornell University as a campus gathering point and a center for social, cultural, and recreational activities. The Straight is open daily from 7:00 A.M. to 11:00 P.M. It provides meal service; snacks for late afternoon and evening; lounges; rooms for student meetings; offices for seventeen student organizations; the University Theatre; a billiard and game room; a barber shop; public telephones; coin lockers for temporary storage; a notary public; a browsing library well stocked with books, periodicals, and newspapers; a craft-shop; a music room; and an art lounge.

In addition to regular meal service, the Willard Straight dining department is equipped to serve informal parties, teas, receptions, private luncheons and dinners, and barbecues, and to provide picnic box lunches.

The main desk is a focal point for campus information and services. Newspapers, current magazines, postcards, candy, and cigarettes are available. The Straight desk will cash checks up to \$25 for persons having a Cornell Summer Session Certificate of Registration. The desk also has up-to-date information on campus events, athletics, films to be shown on campus and in Ithaca, etc. The daily tours of the campus originate here. Travel information and road maps may be procured from the desk. The Straight ticket office sells tickets for campus and Ithaca events from 12:00 NOON to 5:00 P.M.

The Willard Straight Summer Session Committee arranges lectures, trips, nature walks, art exhibits, open houses, tournaments, receptions, and dances. Students are encouraged to submit new program ideas and to participate on the Committee.

The right is reserved to request appropriate identification from persons who use the Hall and its facilities and who participate in its programs.

## RELIGIOUS SERVICES

### Sage Chapel

Nondenominational services (ecumenical insofar as possible) are held in Sage Chapel throughout the academic year. Since 1875 Sage Chapel has been the center of worship for the Cornell community. In that year an endowment fund was established by the Dean Sage family for the purpose of bringing religious leaders and speakers to the Chapel. This fund was later augmented by the Thorp family. Outstanding clergymen and laymen—Protestant, Catholic, Jewish, and those from other religious traditions—preach in Sage Chapel during the academic year. Also chaplains and staff of the Coordinated Religious Programs lead the services each week and preach from time to time throughout the year. During the Summer Session period a similar series is provided in the Chapel at 11:00 A.M. on the six Sundays, July 4–August 8 inclusive. Information about other religious services on campus and in Ithaca may be obtained in the *Weekly Bulletin* or by calling 256-4214.

## COORDINATED RELIGIOUS PROGRAMS AT CORNELL

"Freedom for all; domination by none" is the guiding principle under which religious and interreligious affairs have flourished at Cornell since 1869. Organizational structures have altered through the years to keep pace with changing times, the growing complexity of the University, and the need to meet the challenge of succeeding generations in their search for significant faith and meaningful life. Now, in 1971, new structures again are emerging. In the place of Cornell United Religious Work (CURW) which came into being in 1929 three new organizations, all housed in Anabel Taylor Hall, will become operational on July 1:

### I. OFFICE FOR THE COORDINATION OF UNIVERSITY RELIGIOUS AFFAIRS

Among the functions of this Office are (1) the administration and scheduling of Anabel Taylor Hall for religious and other campus groups; (2) providing an information and referral service concerning religious counselors, programs, projects, and worship services (telephone: 256-4214); (3) serving as liaison between the Centre for Religion, Ethics, and Social Policy; the Council of Federated Ministries; and the divisions and departments of the University; and (4) in general, facilitating, coordinating, and interpreting religious affairs at Cornell in

cooperation with the University Senate's Subcommittee on Religious Affairs and under the Vice President for Campus Affairs.

## II. CENTRE FOR RELIGION, ETHICS, AND SOCIAL POLICY

This new Centre is designed to operate as the successor of the non-denominational program of CURW. Chartered as an independent educational institution, it will devise programs in the tradition of CURW which will provide opportunities for faculty, students, churchmen, and others to investigate and analyze the relationship between belief systems and the development of social policy. The Centre will initiate lectureships, conferences, research programs, action projects, and publications as methods of dealing with religious, ethical, and ideological implications of social policy. It is expected that the Centre will render valuable service both to Cornell and to the various religious bodies in their respective deliberations on policy matters of moral and ethical import. It will work closely with other programs and centers at Cornell which are similarly concerned with normative questions. The Centre will neither accredit courses nor confer degrees but will be clearly defined as having an educational purpose.

During Summer Session, inquiries about the work of the Centre are welcomed. Come to Anabel Taylor Hall for information and conversation about prospective programs.

## III. COUNCIL OF FEDERATED MINISTRIES

The Council is organized for the purpose of extending and coordinating the interests and concerns of the religious ministries at Cornell University. At present seventeen denominations and other religious bodies are represented in the Council. While each University ministry is autonomous, developing programs according to the aims, goals, and religious and moral persuasions of its constituents, the Council provides ongoing opportunity for joint-programming and interreligious cooperation.

In addition to their leadership in worship, projects, and noncredit course offerings, twelve full-time and part-time chaplains, as well as several faculty advisers, provide special counseling services to the Cornell community.

Information concerning Summer Session activities of the various ministries may be secured at Anabel Taylor Hall. Also, many of the chaplains are available for counseling during the summer.

**THE COMMONS.** A coffeehouse facility in Anabel Taylor Hall opens each evening at 8:00 P.M. during the Summer Session. It is an art-form center and also contains a small library in contemporary theology. Films, folk-singing, poetry reading, and related programs are part of the informal fare.

## CONCERTS

The 1971 Summer Session Concert Series is a part of the Summer Arts Festival. For further information see pp. 98-99.

## SUMMER SESSION CHOIR

Music for the Sage Chapel services is provided by the Summer Session Choir and by Professor Donald R. M. Paterson, University organist. The Choir rehearses in Sage Chapel on Tuesday evenings at 7:15 and on Sunday mornings at 9:30. The first rehearsal will be held on Sunday, July 4. All students and interested persons are invited to participate.

During the two-week Choral Music Program, which is a component of the Summer Arts Festival, the Summer Session Choir will be joined by the participants of the choral music group. For further information on the Choral Music Program see pp. 98-99.

## PUBLIC LECTURES

A wide variety of lectures is available to all students in the Summer Session as well as to members of the University community at large. The Summer Session itself sponsors a series of weekly lectures on topics of general interest. The student union, Willard Straight Hall, also sponsors a general interest series as does the Commons in Anabel Taylor Hall. In addition various departments, such as physics, sponsor lectures of more specialized interest. As a result there is usually a choice of four or five lectures in a typical week during the Summer Session period.

## SUMMER THEATRE

The summer program of the Department of Theatre Arts is part of the offerings of the Summer Arts Festival. For information on the productions to be presented and courses offered see pp. 102-103.

## ART EXHIBITIONS

### Andrew Dickson White Museum of Art

Cornell's Museum of Art presents a program of temporary exhibitions in addition to housing the University's permanent art collection.

During the summer of 1971 several loan exhibitions will be featured. Also on view will be selections from the Museum's Asian, contemporary, and graphic arts collections.

In the summer the Museum is open daily except Monday from 11:00 A.M. to 4:30 P.M. and on Sunday from 1:00 to 4:30 P.M.

### Van Rensselaer Art Gallery

Student work from design courses in the Department of Design and Environmental Analysis is shown during the summer in Van Rensselaer Art Gallery (room 317). Students, faculty, and visitors are cordially invited to visit the exhibit.

Gallery hours are 9:00 A.M. to 5:00 P.M. Monday through Friday.



## SPORTS

Softball diamonds on Upper Alumni Field, tennis courts conveniently situated around the campus, and the eighteen-hole University golf course on Warren Road are available for the use of Summer Session students.

Private lessons in golf, tennis, and swimming, and an intramural softball league are sponsored by the Department of Physical Education and Athletics.

The gymnasium in Teagle Hall offers facilities to male students for basketball, volleyball, and general workouts Monday through Friday from 9:00 A.M. to 5:00 P.M. Presentation of the official Summer Session Registration Certificate is required for admittance.

Women students may use the gymnasium in Helen Newman Hall from 1:00 to 5:00 P.M. Monday through Friday. Equipment is available for badminton, basketball, and volleyball. Students must furnish their own gymnasium shoes.

### Grumman Squash Courts

Facilities for squash and handball are available daily. Participants must furnish their own game equipment. Presentation of the official Summer Session Registration Certificate is required for admittance.

### Swimming

Swimming facilities in Teagle Hall pool will be available for male students Monday through Friday each week from 12:00 NOON to 2:00 P.M., coed swimming from 2:10 to 3:10 P.M. Students will be admitted and a towel may be obtained upon presentation of the official Summer Session Registration Certificate.

Women students may use the Helen Newman pool from 1:00 to 4:00 P.M. Monday through Friday. Towels and suits are provided, but students must furnish their own bathing caps. From 2:00 to 4:00 P.M. a woman student may be accompanied by a male guest.

### Intramural Softball League

Groups or individuals who wish to participate in softball competition should see Mr. Peter Carhart, 256-4065.

### Private Lessons

The Department of Physical Education and Athletics sponsors private lessons in golf, tennis, and swimming.

Tennis: Hours to be arranged. Call Mr. Alf Ekman, 256-3653 or 272-8303.

Golf: Hours and instructor in charge to be announced. Call Mr. George Hall at the University Golf Course, 256-3361.

Swimming: Hours to be arranged. See Mr. Peter Carhart at Teagle Hall or call 256-4065.



## Sports-Fitness School for Boys

Boys, seven to fourteen years of age, will be given an opportunity to take part in the Cornell Sports-Fitness School. It will be operated for five weeks, beginning June 28 and ending July 30, on the University athletic fields and at Teagle pool. The program is directed by the Cornell swimming coach, Peter S. Carhart. A fee will be charged. Applications may be obtained at the Physical Education Office in Teagle Hall.

## Summer-Ithaca

A nonprofit community organization, staffed by volunteers and beginning its eleventh year of service to the community, Summer-Ithaca seeks to encourage the performing and visual arts for the entertainment, recreation, and participation of residents and visitors during the summer months.

A calendar of varied events of interest to residents and visitors is published and distributed free of charge by Summer-Ithaca and the Ithaca Chamber of Commerce. Cornell University cooperates in developing this program of events. The scope of activities includes theatre, concerts, lectures, films, exhibitions, and recreation, designed to appeal to a wide range of ages and interests. All events, many without charge, are open to Summer Session students and add to the attractiveness of summer in Ithaca.

Anyone interested in participating or contributing to any of these programs is asked to contact Mr. John F. Murphy, 273-2331.

## SCHEDULE OF COURSES

Course offerings of the Summer Session are organized and described on the following pages under three classifications: the six-week Summer Session, Special Programs, and the Summer Arts Festival, with cross reference to those offerings which apply to more than one classification.

The courses of instruction are listed alphabetically by department with few exceptions. For offerings in particular subject fields consult the Index.

Because of demands that may be placed upon the instructing staff, it is occasionally necessary to substitute an instructor for one named in the course descriptions. Changes in instructors prior to registration will be listed in the *Supplementary Announcement*, which is distributed to students on registration day.

*The dean reserves the right to cancel any course for which, through unforeseen circumstances, satisfactory instruction cannot be provided.*

## Academic Credit

Courses offered in the six-week Summer Session are assigned appropriate hours of credit. The same is true in many of the Special Programs of the Summer Session. Students are not to register for any course work which normally cannot be completed by the end of the Summer Session term.

In this Announcement each credit course is marked immediately after the title in one of three ways.

(U): Courses marked (U) carry credit only at the undergraduate level.

(U,G): Courses marked (U,G) are offered both at the graduate and undergraduate levels. Graduate students who are candidates for advanced degrees or who wish certification for work done at the graduate level must indicate at the time of registration their intention to complete the course at the graduate level and must be prepared to do any additional work that may be required. Students registered in "U,G" courses should consult with their instructors early in the session to see that the level is properly recorded. Accuracy of final grade reporting depends upon such action.

(G): Courses marked (G) are intended primarily for students who are candidates for advanced degrees, for teachers, and for others who wish certification to accrediting agencies for work done at the graduate level. Undergraduates with adequate preparation may register for these courses only after receiving permission from the instructors in charge.

UNIT COURSES, those of less than six weeks in length, are indicated by a *u* following the course number, and their dates are given in the course descriptions. See p. 14 for tuition charges.

COURSES REQUIRING LABORATORY OR OTHER FEES are marked by an asterisk (\*). The course fee usually appears at the end of the course description.

CLASS SCHEDULES. For most courses classes will meet five times a week, Monday through Friday, with no classes on Saturdays for the period of the session or special program. The hours of class meetings are contained in the course descriptions. Courses in the regular session normally meet for seventy-five minutes daily except those carrying two credit hours. They meet for fifty minutes daily.

MEETING PLACES of courses are given in the course descriptions. Any additions or changes in room assignments will be listed in the *Supplementary Announcement*, which is distributed to students on registration day.

EXAMINATIONS. With a few exceptions, final examinations for all courses in the six-week session will be held on Thursday, August 12, and Friday, August 13, at the hours indicated by the schedule on p. 33. The usual classrooms will be used unless a change is announced by the instructor.

Deviations from the schedule on p. 33 will be permitted only if all class members and the instructor agree on the change and it has been

determined that no student in the class has a conflict in time. The Summer Session office should receive notification of any changes in schedules.

In courses in which no examination is to be given, an announcement to that effect will be made by the instructor. In those cases, the last meeting of the class will be held at the time normally scheduled for the examination.

#### EXAMINATIONS WILL BE HELD AS FOLLOWS:

8:00 A.M. classes, Thursday at 8:00 A.M.

9:00 and 9:30 A.M. classes, Friday at 8:00 A.M.

10:00 A.M. classes, Thursday at 10:30 A.M.

11:00 and 11:30 A.M. classes, Thursday at 2:00 P.M.

12:00, 12:30, and 1:00 P.M. classes, Friday at 10:30 A.M.

1:40 and 2:00 P.M. classes, Friday at 2:00 P.M.

**EXCEPTIONS.** For all unit courses in the regular Summer Session, the final examinations will be on Friday.



*Concentration: Temple of Zeus Coffeehouse*

## SUMMER SESSION

June 30–August 13

For registration procedures and other information, see pp. 7–33.

Students admitted to this session may elect a course from among the Special Programs, listed on pp. 72 to 93, if granted permission by the program director and if there is no conflict in the time schedule of classes. Tuition for such courses is at the rate charged for the regular Summer Session.

## AGRICULTURAL ECONOMICS

Agr. Econ. 666. SEMINAR ON LATIN AMERICAN AGRARIAN REFORM (U, G)

Four hours credit. Prerequisite, a reading knowledge of Spanish. M T W Th F 9:30–10:45. Goldwin Smith 160. Mr. Barraclough.

The seminar will review the literature on the relationship between land tenure structure and economic development in the Andean region and analyze the agrarian reform and development policies that have been adopted or proposed. An attempt will be made to evaluate the effectiveness of agrarian reform and development programs in meeting economic, social, and political goals.

See also Latin American Language and Area Program, pp. 88–89.

## AGRICULTURAL EDUCATION

See pp. 73–75.

## AGRICULTURAL ENGINEERING

See p. 74.

## AGRICULTURAL ORIENTATION

Agr. Orien. 110. INTRODUCTORY COLLEGE MATHEMATICS (U)

Four hours credit. Enrollment limited to 35 students. M T W Th F 8–9:15. Laboratories two afternoons a week, to be scheduled. Warren 131.

Designed to give students with a sound secondary school mathematics background a unified treatment of the basic concepts of college algebra, trigonometry, analytic geometry, and the elements of calculus. Considerable emphasis will be placed upon the concept of function, graphing, problem solving, and methods of proof. The Cornell University Computing Language (CUPL) will be taught and used to strengthen and integrate the mathematical topics covered by this course.

## AGRONOMY

See p. 74.

## ANTHROPOLOGY

Anthro. 101. INTRODUCTION TO CULTURAL ANTHROPOLOGY (U,G)  
Three hours credit. M T W Th F 9:30-10:45. Rand 314. Mr. Greenwood.

A comparative study of the organization of cultural behavior in systems of communications, technology, social relations, rituals, ideas, and sentiments; the relation of such systems to personal behavior and to continuity, change, and cultural transfer in history. Illustrative materials drawn largely from non-Western societies.

Anthro. 102. THE EVOLUTION OF MAN (U,G)

Three hours credit. M T W Th F 8-9:15. Rand 314. Mr. Stini.

A survey of the processes and history of man's evolution. The mechanisms of evolutionary change and adaptation to the environment are examined from the standpoint of both archaeology and human biology. The presentation of material from both disciplines makes possible a documentation of the evidence of the progress of evolutionary change at both the organic and cultural levels. In addition, aspects of ongoing evolution of living populations are discussed with emphasis on the long-term interaction of biological and cultural factors.

Anthro. 218. POPULAR CULTURAL ANTHROPOLOGY: AN  
EVALUATION (U,G)

Three hours credit. M T W Th F 11-12:15. McGraw 305. Mr. Greenwood.

Through rapid popularization, anthropological ideas are said to have a considerable impact on our society, yet academic reviews of popular works (for example; Mead, Morris, Tiger, Montagu) are often negative. Through an examination of the content of "popular" works and comparison with "scientific" works on the same subjects, the course will determine whether the former faithfully represent the latter. If not, an attempt will be made to determine how scientific results are modified for popular consumption. If "popular" works adequately represent the field, then academic criticism can be termed unfair.

Anthro. 221. THE BIOLOGY OF MAN (U,G)

Three hours credit. M T W Th F 12:30-1:45. McGraw 303. Mr. Stini.

A survey of important biological characteristics of the human species. Considerable emphasis will be given to human growth and development and the effects of the environmental factors on the phenotypic expression of genetic traits. The interaction of various human populations and their environments, as seen in disease and nutritional stress, will be discussed with reference to actual case-study material.

Anthro. 304. PHYSICAL ANTHROPOLOGY (U,G)

Three hours credit. M T W Th F 2-3:15. McGraw 303. Mr. K. A. R. Kennedy.

A survey of evolutionary and ecological principles employed in the study of man and non-human primates; primate behavior; human palaeontology; biological variation between human populations; population genetics; the human life cycle; man's adaptation to the environment.

## Anthro. 372. LIVING RACES OF MAN (U,G)

Three hours credit. M T W Th F 11-12:15. McGraw 303. Mr. K. A. R. Kennedy.

A detailed analysis of the forces producing differences between human populations. Genetics, epidemiology, demography, and physiology all combine to produce the variety seen in divergent peoples. A critique of the concept of race, the historical development of the concept, and the notion of races as a taxonomic entity are studied in the light of those scientific disciplines closely related to the data of human biology.

## Anthro. 507. ANDEAN CIVILIZATION: SPECIAL PROBLEMS IN ANTHROPOLOGY (U,G)

Four hours credit. M T W Th F 11-12:15. Goldwin Smith 160. Mr. Lynch.

The course will center on the origins, development, and diffusion of native Andean Civilization. The material will be arranged so that students from associated disciplines will be able to study and learn about the historical development of Andean Civilization.

See also Latin American Language and Area Program, pp. 88-89.

## ARCHITECTURE

See Special Programs, pp. 75-76.

## ART

EXPLORING THE VISUAL ARTS. See pp. 101-102.

HISTORY OF ART. See p. 56.

SUMMER ARTS FESTIVAL. See pp. 95-104.

STUDIOS IN ART. See p. 101.

## BIOLOGICAL SCIENCES

## \*Biol. Sci. 101u. GENERAL BIOLOGY (U)

Three hours credit. *June 30 to July 23*. Registration permitted only to students who also register for Biol. Sci. 102u. Lectures, M T W Th F 9:30-11:50. Malott 405. Laboratory, M T W Th F 1:30-4:30. Roberts 392. Mrs. McFadden and staff.

Designed for students intending to specialize in some aspect of biology or biochemistry, or in closely related subject areas. Plant and animal materials are considered together rather than in separate units.

Course 101u covers cellular biology, the biochemistry of metabolism, physiology and anatomy, and behavior. Course 102u includes genetics, developmental biology, evolutionary theory, the biology of populations and communities, the origin of life, and the evolutionary patterns in the plant and animal kingdoms. Each topic is considered in the light of modern evolutionary theory. The laboratory work is designed to give first-hand experience with the materials discussed in lecture. Fee, \$12.50.

## \*Biol. Sci. 102u. GENERAL BIOLOGY (U)

Three hours credit. *July 26 to August 13*. A continuation of Biol. Sci. 101u

and open only to persons registered in Biol. Sci. 101u. Time and place of class meetings same as for Biol. Sci. 101u, p. 37. Mrs. McFadden and staff.

For course description see Biol. Sci. 101u. Fee, \$12.50.

**\*Biol. Sci. 106. INTERACTIVE COMPUTING FOR SCIENCE STUDENTS (U,G)**

One hour credit. Lectures, F, 1-2. Ives 112. Laboratory work to be arranged. Mr. Howland.

An introduction to computing using the interactive language FOCAL with a discussion of other algebraic computing languages, such as BASIC and elementary FORTRAN. Students will be issued tickets for five hours of computing time at the Division of Biological Sciences Interactive Computing Facility. Applications to problems in the sciences will be emphasized. Fee, \$25.

**Biol. Sci. 131. INTRODUCTORY GENERAL BIOCHEMISTRY, LECTURES (U)**

Six hours credit. Prerequisite, one unit of high school chemistry. One unit of high school biology not required but highly desirable. M T W Th F 8-9:15, 11-12:15. Reports and discussion periods to be arranged. Stocking 119. Mr. Neal.

Designed for students interested in the biological sciences who wish to obtain a firm chemical foundation for further studies in this field, or, for those desiring to obtain a knowledge of the fundamental principles of general, organic, and biological chemistry with emphasis on chemical processes that occur in living organisms. Selected topics are discussed in a manner which gives a comprehensive introduction to the principles involved. Biologically active compounds are used extensively to illustrate basic organic reactions which, in turn, serve as a rigorous introduction to biochemical topics including the degradation and synthesis of biologically active compounds and their interrelationships. The level of the course is indicated by the text, *Chemistry and Biochemistry: A Comprehensive Introduction*, by A. Leslie Neal, McGraw-Hill Book Company, 1971.

**Biol. Sci. 361. GENERAL ECOLOGY (U,G)**

Three hours credit. Prerequisites, Biol. Sci. 101-102 or 103-104 or equivalent. Lectures M T W Th F, 11-12:15. Stimson G-1. Afternoon field trips to be arranged.

Principles concerning the interactions between organisms and their environment. Influence of competition, social behavior, predation, and other factors on population size and dispersion. Role of energy flow and mineral cycling in determining the structure and productivity of ecosystems. Succession and classification of natural communities. Influence of climate and past events on the diversity and stability of communities in different regions of the world. Interspecific competition and the niche concept. Chemical interactions between organisms. Application of ecological principles to human problems. Modern evolutionary theory will be stressed throughout and attention given to conflicting ecological hypotheses.

**Biol. Sci. 431. PRINCIPLES OF BIOCHEMISTRY, LECTURES (U,G)**

Four hours credit. Prerequisite, elementary organic chemistry (Chem. 353) or the equivalent. M T W Th F 8-10. Riley-Robb 105. Miss Griffiths.

A basic course dealing with the chemistry of biological substances and their transformations in living organisms. The major areas of biochemistry will be covered comprehensively.

**BIOLOGY OF THE HONEY BEE**, see Entomology 262, p. 52.



## CHEMISTRY

*Students and members of the teaching staff are required to wear safety glasses or prescribed eye protective devices in all chemistry laboratories.*

### \*Chem. 107u. GENERAL CHEMISTRY (U)

Three hours credit. *June 30 to July 23.* Prerequisite, at least two units of mathematics, and one unit or more of secondary school chemistry. Registration permitted only to students who register also for Chemistry 108u. Lectures, M T W Th F 8-9:50. Recitations, T W Th 3:30-4:30. Lectures and recitations in Baker Laboratory 135. Laboratory M T W Th F 10-1. Baker Laboratory 101. Mr. Hester and staff.

The important chemical principles and facts are covered, with considerable attention given to the quantitative aspects and to the techniques which are important for further work in chemistry. Texts: Sienko and Plane, *Chemistry, Principles and Property*; Sienko and Plane, *Experimental Chemistry*, 3d. ed. Fee, \$7.50.

### \*Chem. 108u. GENERAL CHEMISTRY (U)

Four hours credit. *July 26 to August 13.* Prerequisite, Chemistry 107u or its equivalent. Lectures, M T W Th F 8-9:50. Recitations, T W Th 3:30-4:30. Lectures and recitations in Baker Laboratory 135. Laboratory M T W Th F 10-1. Baker Laboratory 101. Mr. Hester and staff.

A continuation of Chem. 107u, serves as prerequisite for Chemistry 236 or Chemistry 353. The laboratory includes a simplified scheme of qualitative analysis. Texts: as listed above for Chem. 107u. Fee, \$7.50.

### Chem. 353. ELEMENTARY ORGANIC CHEMISTRY (U,G)

Four hours credit. Prerequisite, Chemistry 104 at a grade of C-, or 108 or 116, or their equivalent. Chemistry 355 must be taken concurrently with Chemistry 353. Primarily for students in the premedical and biological curricula. The student should determine the entrance requirements for the particular medical school he wishes to enter. Lectures, M T W Th F 8-9:50. Baker Laboratory 119.

An integrated study of aliphatic and aromatic organic compounds, their occurrence, methods of preparation, reactions, and uses. The relationship of organic chemistry to the biological sciences stressed. Text: *Modern Organic Chemistry*, Roberts and Caserio.

### \*Chem. 355. ELEMENTARY ORGANIC LABORATORY (U,G)

Two hours credit. Must be taken with Chemistry 353. Laboratory, M T W Th F 10-1. Baker Laboratory 201.

Laboratory experiments on the preparation and reactions of typical aliphatic and aromatic compounds. Fee, \$15.

## CHINESE SUMMER LANGUAGE PROGRAM

See p. 76.

## CITY AND REGIONAL PLANNING

See pp. 76-78.



## CLASSICS

## Greek

## Greek 101u. GREEK FOR BEGINNERS (U)

Three hours credit. *June 30 to July 23.* M T W Th F 8-9:15 and 11-12:15. Goldwin Smith 124. Mr. Spofford.

Introduction to Attic Greek. Designed to enable the student to read the ancient authors as soon as possible. Must be taken with Greek 103u.

## Greek 103u. ATTIC GREEK (U)

Three hours credit. *July 26 to August 13.* Same time schedule as Greek 101u. Mr. Spofford.

Readings from Plato. Must be registered in Greek 101u.

## Latin

## Latin 105u. LATIN FOR BEGINNERS (U)

Three hours credit. *June 30 to July 23.* M T W Th F 8-9:15 and 11-12:15. Goldwin Smith 120A. Mr. J. R. Wilson.

An introductory course in the essentials of the Latin language, designed for rapid progress toward reading the principal Latin authors. Must be taken with Latin 106u.

## Latin 106u. LATIN FOR BEGINNERS (U)

Three hours credit. *July 26 to August 13.* Same time schedule as Latin 105u.

Selected readings. Open only to persons registered in Latin 105u. Mr. J. R. Wilson.

See pp. 61-64 for listings of MODERN FOREIGN LANGUAGES.

## COMMUNITY SERVICE EDUCATION

## CSE 500. SPECIAL PROBLEMS FOR GRADUATE STUDENTS (G)

Credit and hours to be arranged. Department faculty. S-U grades optional.

For graduate students recommended by their chairman and approved by the head of the department and the instructor in charge for independent advanced work.

## CSE 525. REHABILITATING THE CULTURALLY DIFFERENT (U,G)

Three hours credit. M T W Th F 9:30-10:45. Van Rensselaer NG-06. Mr. Babcock.

For students and practitioners in a variety of helping fields, e.g., counselors, teachers, extension workers, clergy, employment interviewers. A survey and analysis of the policies and practices of the federal-state vocational rehabilitation movement highlighting those aspects pertinent to working with the culturally disadvantaged. A review of the failures and successes of contemporary action programs. Topics for discussion include the rehabilitation process; the nature of cultural disadvantage; identifying, diagnosing, and working with underprivileged persons; work adjustment and training; placement; current legislation. Successful practitioners as well as culturally disadvantaged persons serve as consultants to the course.

## 42 COMPARATIVE LITERATURE

### CSE 599. MASTER'S THESIS AND RESEARCH (G)

Credit and hours to be arranged. S-U grades optional. Registration with permission of the instructor and chairman of graduate committee. Department graduate faculty.

### CSE 699. DOCTORAL THESIS AND RESEARCH (G)

Credit and hours to be arranged. S-U grades optional. Registration with permission of the instructor and chairman of the graduate committee. Department graduate staff.

See the Special Programs section for the following course:

### CSE 585u. WORKSHOP: DEVELOPMENT OF LEARNING PACKAGES (G), p. 86.

## COMPARATIVE LITERATURE

### Comp. Lit. 101. ART AND THE SOCIAL ORDER—THE VIEW FROM WITHIN THE DOMAIN OF LITERATURE (U)

Three hours credit. Registration limited to 20 students. M T W Th F 9:30–10:45. Goldwin Smith 128. Mr. Gelley.

The defense of art and the self-justification of the artist is one of the most wide-spread themes of modern literature, but it is by no means simply an issue of this age. Plato's attack on the poets already set the pattern for some of the defensive postures that poets, and artists in general, have had to assume throughout history. The aim of this course will be to examine a number of definitions of art, not only in explicit aesthetic pronouncements but also as they are incorporated into literary works. The readings will consist of short theoretical writings, poems, plays, and one novel. The following authors will be represented: Aristotle, Sophocles, Shakespeare, Pope, Rousseau, Shelley, Keats, Freud, Mann, Yeats, Stevens, Beckett, and Grass.

### Comp. Lit. 201. WESTERN LITERATURE (U,G)

Three hours credit. Registration limited to 20 students. M T W Th F 9:30–10:45. Goldwin Smith 124. Mr. W. J. Kennedy.

The values, goals, and sense of commitment of heroes in crisis from Homer through Dante, Milton, and Goethe, to more recent writers. Attention to cultural backgrounds; to relationships involving the arts, history, philosophy, psychology; and finally to questions of literary form (genre, style, mode). Recommended both for majors in literature and for non-majors who wish background in the high points of the Western literary tradition.

### Comp. Lit. 352. THE MODERN EUROPEAN NOVEL (U,G)

Four hours credit. M T W Th F 2–3:15. Goldwin Smith 128. Mr. Gelley.

A survey of the European novel in the nineteenth and twentieth centuries with particular attention to the variety of forms within the genre. Lectures will concentrate on the theory of the novel in various periods. Interpretation of specific novels will be conducted through class reports and discussions. Authors to be read will include Goethe, Stendhal, Balzac, Gogol, Dostoevsky, Proust, Grass.

## COMPUTER SCIENCE

### \*Comp. Sci. 202. COMPUTERS AND PROGRAMMING (U,G)

Three hours credit. Some programming experience in an algebraic language highly desirable but not required. M T W Th F 9:30-10:45. Upson 351. Mr. Thomas Wilcox.

This is intended as a foundations course in computer programming and machine organization and serves as an introduction to more advanced topics in computer science. The course discusses the specification of syntax and semantics, data types and structure, statement types, program structure. In machine organization it discusses components, representation of data, storage, addressing, instructions, interpretation cycle, interrupts. For assembly language programming it describes format and basic instructions, the assembly process, loops and indexing, data types, subroutines, macros. The programming of and debugging programs on a computer is an essential part of the course. Fee, \$10.

### \*Comp. Sci. 311. INTRODUCTION TO COMPUTER PROGRAMMING (U,G)

Three hours credit. No prerequisites, but must have high mathematical aptitude. M T W Th F 12:30-1:45. Upson 330. Mr. Johnson.

The purpose of this course is to teach the student how to program a digital computer in a higher level language (PL/I). The course will concentrate on the analyses of numerical and nonnumerical problems, formulation of these problems for automatic computation, construction of PL/I algorithms which describe the computations, and their execution on the computer. This course will not deal explicitly with computer organization nor with machine language programming. For these topics see Computer Science 202. Fee, \$10.

See also Biol. Sci. 106. INTERACTIVE COMPUTING FOR SCIENCE STUDENTS, p. 38.

## CONSERVATION

INTRODUCTORY PROGRAM IN FIELD ECOLOGY. See p. 83.

NATURAL RESOURCES INSTITUTE. See p. 75.

## CONSUMER ECONOMICS AND PUBLIC POLICY

### CEPP 500. SPECIAL PROBLEMS FOR GRADUATE STUDENTS (G)

Credit and hours to be arranged. Department faculty. S-U grades optional.

For graduate students recommended by their chairman and approved by the head of the department and the instructor in charge for independent, advanced work.

### CEPP 599. MASTER'S THESIS AND RESEARCH (G)

Credit and hours to be arranged. S-U grades optional. Registration with permission of the instructor and chairman of graduate committee. Department graduate faculty.

## 44 ECONOMICS

### CEPP 699. DOCTORAL THESIS AND RESEARCH (G)

Credit and hours to be arranged. S-U grades optional. Registration with permission of the instructor and chairman of graduate committee. Department graduate faculty.

See the Special Programs section for the following course:

CEPP 535*u*. CONSUMER IN THE MARKET (G), pp. 86-87.

## CORNELL ALUMNI UNIVERSITY

See pp. 79-80.

## DESIGN AND ENVIRONMENTAL ANALYSIS

### DEA 500. SPECIAL PROBLEMS FOR GRADUATE STUDENTS (G)

Credit and hours to be arranged. S-U grades optional. Department faculty.

For graduate students recommended by their chairman and approved by the head of the department and the instructor in charge for independent advanced work.

### DEA 599. MASTER'S THESIS AND RESEARCH (G)

Credit and hours to be arranged. S-U grades optional. Registration with permission of the instructor and chairman of graduate committee. Department graduate faculty.

## ECONOMICS

### Econ. 101. MODERN ECONOMIC SOCIETY (U)

Three hours credit. M T W Th F 8-9:15. Goldwin Smith 225. Mr. Hines.

Concentration on the determinants of aggregate economic activity. Main areas studied are the monetary and banking systems, the composition and fluctuations of national income, and the major determinants of economic growth—all as influenced by monetary, fiscal, and other policies.

### Econ. 102. MODERN ECONOMIC SOCIETY (U)

Three hours credit. M T W Th F 9:30-10:45. Goldwin Smith 225. Mr. L. Johnson.

A survey of the existing economic order with particular emphasis on the salient characteristics of the modern American economy. The concentration is on explaining and evaluating the operation of the price system as it is modified and influenced by private organizations and governmental policy.

### Econ. 300. SEMINAR (U,G)

Four hours credit. Prerequisite, consent of the instructor. M T W Th F 11-12:15. Goldwin Smith 26.

Seminar will be offered in mathematical economics.

### Econ. 311. INTERMEDIATE MICROECONOMIC THEORY (U,G)

Four hours credit. Prerequisite, 102 or its equivalent. M T W Th F 11-12:15. Goldwin Smith 264. Mrs. Gosse.

Analysis of the pricing processes in a private enterprise economy under varying competitive conditions and their role in the allocation of resources and the functional distributions of national income.

**Econ. 312. INTERMEDIATE MACROECONOMIC ANALYSIS (U,G)**

Four hours credit. Prerequisite, Economics 101 or its equivalent. M T W Th F 9:30-10:45. Goldwin Smith 264.

An introduction to the theory of national income determination and economic growth in alternative models of the national economy; the interaction and relation of aspects of these models to empirical aggregate economic analyses.

**EDUCATION**

The following program is presented to serve public and private school personnel and other persons interested in professional preparation and improvement.

**Ed. 417. PSYCHOLOGY OF ADOLESCENCE (U,G)**

Three hours credit. Prerequisite, an introductory course in psychology or its equivalent. M T W Th F 9:30-10:45. Warren 101. Mr. Cole.

A survey of the nature of adolescent growth and development with emphasis on some of the causal factors pertaining to education of adolescents. May be applied toward certification of secondary school teachers and guidance counselors.

**Ed. 445u. TEACHING READING AND STUDY SKILLS (U,G)**

Three hours credit. *June 30 to July 23.* M T W Th F 8-9:30. Warren 261. Mr. Pauk.

For teachers, administrators, guidance counselors, and supervisors. Pertinent research as well as the psychology and philosophy of developmental reading and study skills will be examined. Teaching methods and sample materials for classroom use will be demonstrated and discussed.

**Ed. 470. EDUCATIONAL ISSUES IN A DEMOCRACY (U,G)**

Three hours credit. M T W Th F 9:30-10:45. Warren 201.

A consideration of persistent and significant educational issues facing American society and pertinent to the work of the teacher.

**Ed. 470u. WORKSHOP ON EDUCATIONAL ISSUES IN A DEMOCRACY (U,G)**

Three hours credit. *June 30 to July 23.* M T W Th F 9:30-12:50. Warren 261. Mr. Gowin and staff.

An intensive workshop concerning issues of alternative schooling, radical theories of education, experimental and innovative programs, behaviorally defined objectives, student protest, performance contracting, and structural communication.

**Ed. 473. CONTEMPORARY PHILOSOPHY OF EDUCATION (U,G)**

Three hours credit. M T W Th F 11-12:15. Warren 201.

The problem of how knowledge is organized. Methods for analyzing knowledge claims of any discipline.

**Ed. 499. INFORMAL STUDY IN EDUCATION (U,G)**

Maximum credit, three hours. Members of staff.

The privilege of informal study is granted to a qualified junior, senior, or graduate student, when approved by an adviser from the Department of

Education staff who is personally responsible for the study. Two purposes are sanctioned: (1) to engage in a study of a problem or topic not covered in a regular course; (2) to undertake tutorial or honors study of an independent nature in the area of the student's research interests. The program is not designed as a supplement to a regular course for the purpose of increasing the content and credit allocation of that course.

#### Ed. 500. SPECIAL STUDIES (G)

Credit as arranged. Members of the staff.

Limited to graduate students working on theses or other research projects. Each registration must be approved by a staff member who will assume responsibility for the work.

#### Ed. 511. EDUCATIONAL PSYCHOLOGY (U,G)

Three hours credit. Prerequisite, an introductory course in psychology, or its equivalent. M T W Th F 11-12:15. Warren 101. Mr. Cole.

Includes consideration of basic theoretical issues and relevant evidence in respect to learning, perception, cognition, motivation, ability structure, and attitudes. Trends in theory and research will be the focal points for reading and class discussion.

#### Ed. 555. USE AND INTERPRETATION OF TESTS IN GUIDANCE AND PERSONNEL ADMINISTRATION (G)

Three hours credit. M T W Th F 8-8:50, third hour to be arranged. Olin 218. Mr. Andrus.

Open to students in guidance or personnel administration and to classroom teachers who expect to work with standardized group tests. Deals with the historical development, use, and interpretation of aptitude tests as a basis for guidance and selection in public schools, colleges, and/or industry. Designed to meet the New York State certification requirement for guidance counselors.

#### Ed. 562u. THE PRINCIPALSHIP (G)

Three hours credit. *June 30 to July 23.* M T W Th F 9:30-10:45. Warren 260. Messrs. Hixon and Haller.

Organized to enable recognition and cognition of the administrative functions essential to effective elementary and secondary schools. Analysis will include the elementary and secondary schools as institutions, authority and social structure, innovations in organization and curriculum, administration of instructional and non-instructional personnel, community relationships, and the change process.

#### Ed. 582. EDUCATIONAL AND VOCATIONAL GUIDANCE (G)

Two hours credit. M T W Th F 11-11:50. Warren 260. Mr. Bresee.

An introductory survey course that deals with the theory and practice of guidance in public schools. Designed to meet the needs of teachers, administrators, and prospective counselors. Required for provisional certification in guidance.

#### Ed. 584. GROUP TECHNIQUES IN GUIDANCE (G)

Two hours credit. M T W Th F 9:30-10:20. Caldwell 250A. Mr. Lewin.

Methods and materials for presenting educational and occupational information to students. Theory and practice of group guidance and counseling in a group setting. Appropriate for counselors and teachers.



## Additional Courses of Interest to Teachers Offered by the Department of Education

Ed. 433u. SPECIAL PROBLEMS: CURRICULUM CONSTRUCTION IN AGRICULTURAL EDUCATION (U,G), p. 74.

Ed. 499u. INFORMAL STUDY IN EDUCATION (U,G), p. 74.

Ed. 500u. SPECIAL STUDIES IN EDUCATION (G), p. 74.

Ed. 534u. EDUCATION FOR LEADERSHIP OF YOUTH AND ADULT GROUPS (G), p. 74.

Ed. 586u. ORGANIZATION AND ADMINISTRATION OF GUIDANCE PROGRAMS (G), p. 84.

Ed. 587u. PRACTICUM IN MEASUREMENT AND APPRAISAL FOR COUNSELORS (G), p. 84.

Ed. 589u. AFFECTIVE EDUCATION (G), p. 84.

## READING AND STUDY SKILLS

\*Ed. 7u. COLLEGE READING AND STUDY SKILLS (U,G)

Noncredit. *July 5 to August 6.* M W or T Th 1:30-3. Reading-Study Center. Olin 375.

The aim of this course is the improvement of reading and study skills. In the area of *reading*, students learn to improve both their reading speed and comprehension. Students are taught how to read selectively; how to distinguish main ideas from supporting material; how to determine an author's thesis and tone; and how to comprehend scholarly and technical material. As part of their training in speed reading, students will have the opportunity to work daily with the reading accelerators in the Reading Laboratory.

Students will also receive instruction in the basic *study skills* which are essential for efficient and effective study. Topics covered will be efficient planning and use of time, recording and remembering lecture notes, preparing for and taking examinations, research procedures and techniques, and marking textbooks and taking notes on readings.

Students must register for this course on June 30, registration day for the six-week session, at Barton Hall. A fee of \$85 will be payable at that time, plus the general fee of \$5 per week required of all Summer Session students. (See Fees, p. 14.)

For additional information, address Mr. Walter Pauk, Director, Reading-Study Center, 375 Olin Hall, Cornell University, Ithaca, New York 14850.

See also COLLEGE PREPARATORY READING AND STUDY SKILLS, pp. 92-93.

## SPECIAL PROGRAMS OF INTEREST TO TEACHERS:

AGRICULTURAL EDUCATION SUMMER PROGRAM, pp. 73-74.

HUMAN ECOLOGY UNIT COURSES, pp. 86-87.



*Beebe Lake with Bradfield Hall in background*

INSTITUTE IN EARTH AND SPACE SCIENCE, p. 80.

NATURAL RESOURCES INSTITUTE, p. 75.

SHELL MERIT FELLOWSHIP PROGRAM, p. 93.

UNIT COURSES IN GUIDANCE, p. 84.

## ENGINEERING

### Electrical Engineering

Engr. 4210. INTRODUCTION TO ELECTRICAL SYSTEMS (U)

Three hours credit. Prerequisites, Math 192 and Physics 122 or their equivalents. Lecture-recitations M T W Th F 9:30-10:45. Phillips 320.

A core-science course intended to develop competence in several analysis skills appropriate to the field of electrical engineering and to impart understanding of the physical basis for the concepts associated with the skills. Topics include: electrical circuit elements (resistors, capacitors, inductors, independent sources, and branch relationships); time functions and their representation (real exponentials, complex numbers, trigonometric functions, and complex exponentials); response of simple networks and the impedance concept (natural response, forced response to periodic excitation, and pole-zero concepts); circuit equations and methods of solution (branch equations, Kirchhoff's laws, nodal and mesh equations, matrix methods of solution, and Norton and Thevenin equivalents); controlled sources and modelling of devices (representation of idealized electronic and electromechanical devices).

### Engineering Cooperative Program

#### Summer Term

See Special Programs of the Summer Session, pp. 80-81.

### Engineering Short Courses

See Special Programs of the Summer Session, pp. 81-83.

### Industrial Engineering and Operations Research

I.E.&O.R. 9160. INTRODUCTORY ENGINEERING PROBABILITY (U)

Three hours credit. Prerequisite, Math. 112, 122, 192. M T W Th F 9:30-10:45. Upson 363.

At the end of this course a student should have a working knowledge of some of the basic tools in probability theory and their use in engineering. This course may be the last course in probability for some students or it may be followed by a course in statistics. The topics include: a definition of probability; basic rules for calculating with probabilities when the number

of possible outcomes is finite; discrete and continuous random variables; probability distribution and density functions; expected values, jointly distributed random variables, and marginal and conditional distributions; special distributions important in engineering work; the normal, exponential, binomial, and other distributions, and how they arise in practice; and Markov chains and applications.

## Mechanical Engineering

Engr. 3020. THE AGE OF POWER—A HISTORY OF TECHNOLOGY (U)  
Three hours credit. M T W Th F 11-12:15. Upson 215. Mr. Conta.

An introduction to the history of technology with emphasis upon the nineteenth and twentieth centuries. A study of the rapid evolution and wide application of power technology which began with the development of the Watt steam engine as a general purpose prime-mover. The emphasis will be on its relationship to other technologies and to the economic, social, and political developments of the period.

## Theoretical and Applied Mechanics

Engr. 1021. MECHANICS OF SOLIDS (U)

Three hours credit. Prerequisite, Math 293. Lectures and recitations M T W Th F 11-12:15. Thurston 202. Computing-laboratory to be arranged.

Principles of statics, force systems, and equilibrium. Mechanics of deformable solids, stress, strain, statically determinate and indeterminate problems. Analysis of slender bars, shearing force, bending moment, singularity functions. Plane stress, transformation of stress, Mohr's circle of stress and strain. Stress-strain-time-temperature relations, elasticity, plasticity, viscoelasticity. Bending and torsion of slender bars; stresses, deformations, and plastic behavior. Virtual work, energy methods, and applications. At the level of *An Introduction to the Mechanics of Solids*, by Crandall and Dahl.

## ENGLISH

Engl. 135. WRITING ABOUT EXPERIENCE (U)

Three hours credit. Limited to 20 students. M T W Th F 11-12:15. Goldwin Smith 248. Mr. Bishop.

An experimental course in autobiographical writing, open to freshmen and sophomores, designed primarily to give the student practice in writing about his own experience, either in the present—here at Cornell—or in the past. Most of the class time will be given to the student's own work.

Engl. 149. THE SEARCH FOR ORDER (U)

Three hours credit. Limited to 20 students. M T W Th F 8-9:15. Goldwin Smith 236. Mr. McConnell.

A course for freshmen and sophomores, designed to explore the relationships of literature and human values. Contemporary social, moral, and scientific problems as reflected in such major authors as Stevens, Eliot, LeRoi Jones, and Malcolm X.

## Engl. 250. THE READING OF POETRY (U)

Four hours credit. M T W Th F 3-4:15. Goldwin Smith 248. Mr. Finlay.

Readings in the major periods, modes, and genres of British and American poetry. The course is designed to widen the student's experience of poetry and sharpen his powers of understanding and response.

## Engl. 303. CREATIVE WRITING WORKSHOP: EXPLORATIONS (U,G)

Four hours credit. Limited to 20 students. M T W Th F 1:30-2:45. Goldwin Smith 246. Mr. States.

A workshop for the development of talent and skills in the art forms of writing. Explorations for the bases of literary aesthetics. Practice in writing poetry, prose fiction, and allied kinds of writing. Participants will submit their own work for analysis in group discussion and in conference.

A component of the Summer Arts Festival. See pp. 96-97.

## Engl. 335. THE AMERICAN NOVEL IN THE NINETEENTH CENTURY (U,G)

Four hours credit. M T W Th F 9:30-10:45. Goldwin Smith 246. Mr. McConnell.

A survey of the forms and themes of American fiction from Charles Brockden Brown to Theodore Dreiser. Special emphasis on the problem of handling social themes in the "romance" form.

## Engl. 346. MODERN DRAMA (U,G)

Four hours credit. M T W Th F 1:30-2:45. Goldwin Smith 236. Mr. Caputi.

A study of the major modern dramatists in English, including Shaw, O'Neill, O'Casey, Beckett, and Pinter, with some attention to relevant continental backgrounds.

## Engl. 354. SCIENCE FICTION (U,G)

Four hours credit. M T W Th F 8-9:15. Goldwin Smith 246. Mr. Panshin.

A study of the leading writers of twentieth-century science fiction, both British and American. Among the authors studied will be Wells, Asimov, and Clarke.

## Engl. 365. CHAUCER (U,G)

Four hours credit. M T W Th F 11-12:15. Goldwin Smith 246. Mr. Brown.

Emphasis on Chaucer's literary artistry in *The Canterbury Tales*, with some consideration of the *Troilus*. No previous work in Middle English is required.

## Engl. 368. SHAKESPEARE (U,G)

Four hours credit. M T W Th F 8-9:15. Goldwin Smith 248. Mr. Kaufman.

A study of selected comedies, histories, and tragedies from the major periods of Shakespeare's career.

## Engl. 385. ADVANCED FICTION WORKSHOP (U,G)

Four hours credit. Limited to 20 students. M T W Th F 11-12:15. Goldwin Smith 236. Mr. McConkey.

A workshop for writers of narrative, of short stories, novels, and allied forms, who are in need of development beyond the exploratory stages of creative writing. Participants will submit their own work for analysis in group discussion and in conference.

## 52 ENTOMOLOGY

### Engl. 387. ADVANCED POETRY WORKSHOP (U,G)

Four hours credit. Limited to 20 students. M T W Th F 3-4:15. Goldwin Smith 236. Mr. Parker.

A workshop for poets in need of development beyond the exploratory stages of creative writing. Participants will submit their own work for analysis in group discussion and in conference.

### Engl. 389. PLAYWRITING (U,G)

Four hours credit. Limited to 20 students. M T W Th F 9:30-10:45. Goldwin Smith 236. Mr. Caputi.

A workshop to consist of analyses of selected model plays, exercises in play-making, and the reading and criticism of student work. Students need not have had any experience in playwriting, but they should have some familiarity with dramatic literature.

Engl. 385, 387 and 389 are components of the Summer Arts Festival. See pp. 96-97.

### Engl. 417. STUDIES IN SEVENTEENTH CENTURY POETRY (U,G)

Four hours credit. M T W Th F 12:30-1:45. Goldwin Smith 236. Mr. Finlay.

The religious poetry of Donne, Herbert, Crashaw, Vaughan, and Milton. Special attention will be paid to the influence of religion on art and to the difficulties of understanding the culture that produced this poetry.

### Engl. 466. MODERN IRISH LITERATURE (U,G)

Four hours credit. M T W Th F 12:30-1:45. Goldwin Smith 248. Mr. Parker.

Emphasis on major figures of the Irish Renaissance—Yeats, Joyce, Synge, and O'Casey—with some consideration of social and political contexts of their work.

ENGLISH AS A SECOND LANGUAGE, see p. 64.

## ENTOMOLOGY

### \*Ent. 262. BIOLOGY OF THE HONEY BEE (U,G)

One hour credit. Prerequisite, first year biology course (Biol. Sci. 103-104). Limited to 10 students. Fifteen laboratories, two per week, plus three evening sessions to be scheduled. Caldwell Hall 225 and Dyce Laboratory. Mr. Morse.

A laboratory and field course in which the classical experiments on the vision, chemical senses, and language of the honey bee, as described by Von Frisch, are repeated. Laboratories include demonstration of the alarm odor, sex attractant, swarm orientation, and observation of the growth of a normal colony of bees both in an observation hive and a standard bee hive. In addition, the study of other social insects and their nests, including wasps, bumblebees, and the semisocial solitary bees are presented. Fee, \$6.

## FIELD ECOLOGY

See p. 83.

## FLORICULTURE

See p. 74.

## GEOLOGICAL SCIENCES

### \*Geol. Sci. 101u. INTRODUCTORY GEOLOGICAL SCIENCE (U)

Three hours credit. *June 30 to July 23*. Registration limited to 30 students. Lectures, M T W Th F 9:30-11:20. McGraw 165. Laboratory M T W Th 1:30-4. McGraw 265. Mr. Sardi and assistant.

An introduction to geological science designed to give general students a comprehensive understanding of earth materials, processes, features, and history. Field trips during certain laboratory periods. Text: Leet and Judson, *Physical Geology*; Geology 101 Laboratory Manual. Fee, \$10.

### \*Geol. Sci. 102u. INTRODUCTORY GEOLOGICAL SCIENCE (U)

Three hours credit. *July 26 to August 13*. Prerequisite, Geological Science 101 or its equivalent. Registration limited to 30 students. Lectures M T W Th F 9:30-11:20. McGraw 165. Laboratory, M T W Th 1:30-4. McGraw 265. Mr. Sardi and assistant.

Continuation of Geological Science 101, the last half of the course being devoted to the principles of interpretation of earth history; evolution of continents, oceans, mountain systems and other features, and development of organic life. Field trips during certain laboratory periods. Text: Leet and Judson, *Physical Geology*; Dunbar, *Historical Geology*; Geology 102 Laboratory Manual. Fee, \$10.

## GOVERNMENT

### Gov. 101. AMERICAN GOVERNMENT AND POLITICS (U,G)

Three hours credit. M T W Th F 9:30-10:45. W. Sibley 102. Mr. Nadel.

This course examines the operation of the American political system. Particular emphasis will be placed upon individual and group participation and the processes by which public policies are formulated and implemented.

### Gov. 104. COMPARATIVE GOVERNMENT (U,G)

Three hours credit. M T W Th F 8-9:15. W. Sibley 102. Mrs. Hanna.

Analysis of the characteristics of contemporary political systems in the developed and underdeveloped areas of the world: factors of stability, party and electoral systems, role of ideology, predominance of executive power in the economically planned society.

### Gov. 203. INTRODUCTION TO POLITICAL THEORY (U,G)

Three hours credit. M T W Th F 9:30-10:45. W. Sibley 318. Mr. Dannhauser.

A survey of the development of Western political theory from Plato to the present. Readings from the work of the major theorists and an examination of the relevance of their ideas to contemporary politics will be stressed.

### Gov. 206. INTRODUCTION TO INTERNATIONAL RELATIONS (U,G)

Three hours credit. M T W Th F 8-9:15. W. Sibley 318. Mr. Rovine.

An introduction to the basic concepts and practice of international politics. The international system and processes of change; adjustment of national interest and of conflict in war and peace. Alternative systems and theories of international relations.

### Gov. 310. POLITICS OF POVERTY (U,G)

Four hours credit. M T W Th F 9:30-10:45. Goldwin Smith 164. Mrs. Hanna.

Emphasis will be placed on the situation and needs of the urban poor as expressed by the poor. Led by an instructor experienced in community action

work, students will examine the history and various theories and methods of community action. Particular problems—violence, drugs, education, polarization—will be studied, as well as the problems of some non-urban poor, i.e. Indians, migrants.

Gov. 319. POLITICAL SOCIALIZATION AND PUBLIC OPINION (U,G)

Four hours credit. M T W Th F 11–12:15. W. Sibley 102. Mr. Weissberg.

Answers to two questions will be sought in this course. (1) Why do Americans believe what they believe? Discussion of this question will focus on the role of family, schools, jobs, and other experiences on the formation of public opinion. (2) What are the consequences (if any) of these beliefs? This question looks at the way in which public opinion is translated into government policy.

Gov. 353. ANTI-DEMOCRATIC THEORY: MARX AND NIETZSCHE (U,G)

Four hours credit. M T W Th F 11–12:15. W. Sibley 318. Mr. Dannhauser.

An examination of the origins of the critique of modern liberal democracy from the Left and the Right in the nineteenth century. The attack on democracy in theory will be viewed as a means of understanding the attack in practice by totalitarian movement in the twentieth century.

Gov. 369. ARMS CONTROL AND THE PURSUIT OF PEACE (U,G)

Four hours credit. Prerequisite, some college level work in international relations previously or concurrently. M T W Th F 9:30–10:45. W. Sibley 101. Messrs. Rovine and Sharfman.

Arms Control appears in twentieth-century history as one of a variety of efforts to make wars less likely. After a brief review of this context, discussion will center around the questions of whether arms control is likely to be an effective means to this end, and whether the current arms-control negotiations are well designed to achieve success.

Gov. 375. CONTEMPORARY AMERICAN FOREIGN POLICY (U,G)

Four hours credit. M T W Th F 11–12:15. W. Sibley 101. Mr. Sharfman.

An exploration of the dilemmas confronting American foreign policy. The development of this policy since 1945, the general issues which are presently unresolved, and specific current problem areas will all be discussed. The central themes of the course will be an effort to develop criteria for evaluating specific decisions.

Gov. 540. SEMINAR IN LATIN AMERICAN POLITICS (U,G)

Four hours credit. M T W Th F 12:30–1:45. Goldwin Smith 160.

The seminar will focus its attention on the mechanisms of political power in the Andean countries. Consideration will be given to the concepts of external domination, peripheral status, dependency, traditional society and modernized, and the political and social institutions which constitute the parameters of political power in the Andean region.

See also Latin American Language and Area Program pp. 88–89.

## HISTORY

Hist. 106. INTRODUCTION TO WESTERN CIVILIZATION (U,G)

Three hours credit. M T W Th F 12:30–1:45. Goldwin Smith 162. Mr. Kagan.

A survey of European history since the French Revolution. Attention is given to the major political, social, and intellectual developments of the



modern Western world. A considerable portion of the reading is in contemporary sources.

Hist. 216. HISTORY OF THE U.S.A., 1783-1860 (U,G)

Three hours credit. M T W Th F 11-12:15. Goldwin Smith 221. Mr. Boyle.

A survey of American history from the time of independence to the Civil War with special attention to five themes: the framing of the Constitution; the westward movement; extension of democracy; the background to the Civil War, the gradual achieving of economic independence.

Hist. 355. GERMANY IN THE MODERN WORLD (U,G)

Three hours credit. M T W Th F 9:30-10:45. Goldwin Smith 221. Mr. Walker.

The meeting of traditional German society and culture with the modern imperatives of change, magnitude, and power, from 1750 to the present. Lectures, reading, discussion.

Hist. 434. HISTORICAL STUDIES IN THE ORIGINS OF WAR (U,G)

Four hours credit. M T W Th F 9:30-10:45. Goldwin Smith 162. Mr. Kagan.

Comparative study of two ancient and two modern wars: the Peloponnesian War, the Second Punic War, World War I, and World War II. Students will read source material as well as interpretations.

Hist. 456. EUROPE IN THE SEVENTEENTH AND EIGHTEENTH CENTURIES (U,G)

Two hours credit. M T W Th F 12:30-1:20. Goldwin Smith 221. Mr. Walker.

A new look at the "old regime." A critical evaluation of corporate society in the light of the liberal experience that followed it. Seminar style: research, readings, discussion.

Hist. 480. TWENTIETH-CENTURY UNITED STATES HISTORY (U,G)

Four hours credit. M T W Th F 2-3:15. Goldwin Smith 221. Mr. Boyle.

The development of the U.S. from 1900 to the present. A study of the main social, political, and economic trends in twentieth-century America, and America's relations with the rest of the world.

Hist. 483. SOUTHERN HISTORY (U,G)

Three hours credit. M T W Th F 8-9:15. Goldwin Smith 162. Mr. Martin.

A survey of the history of the Southern region of the United States from colonial origins to the present day. In the examination of each major period of Southern history special emphasis will be placed on such topics as slavery and race relations, politics, economic development, and literature and culture.

Hist. 485. AMERICAN URBAN HISTORY (U,G)

Four hours credit. M T W Th F 11-12:15. Goldwin Smith 162. Mr. Martin.

A survey of the origins and growth of urban America. Special emphasis will be placed on the processes of urbanization; the interrelationship between urban development and politics, industrialization, ethnic and racial pluralism, and cultural trends; and the plight and promise of contemporary urban life.

See also:

Engr. 3020. THE AGE OF POWER—A HISTORY OF TECHNOLOGY (U), p. 50.

I&LR 404. SOCIAL HISTORY OF AMERICAN WORKERS, 1873-1896 (U,G), p. 58.

Phil. 205. HISTORY OF PHILOSOPHY (U,G), p. 65.

Rur. Soc. 475. THE BLACK EXPERIENCE IN RURAL AMERICA (U,G), p. 69.

## HISTORY OF ART

Hist. of Art 202. INTRODUCTION TO RENAISSANCE AND MODERN ART (U,G)

Three hours credit. M T W Th F 11-12:15. Goldwin Smith 24. Mr. Waage.

A survey of the more important paintings and sculptures by the major artists in Europe and the United States from about A.D. 1400 to the present. Those artists will be treated who have proved to be the most pioneering and inventive and who, therefore, have had the greatest influence upon the subsequent course of art. The purpose is not only to make the student aware of this influence but, even more, to acquaint him with the individual styles of these masters so that he can identify their works on sight. No practice of art is involved.

Hist. of Art 230. INTRODUCTION TO ART HISTORY: MEDIEVAL ART (U,G)

Three hours credit. M T W Th F 9:30-10:45. Goldwin Smith 21. Mr. Calkins.

Not a survey, but an introduction to the methods of art history through a study of selected works of art from the Middle Ages. Representative works of architecture, sculpture, painting, manuscript illumination, metalwork, and ivory of various periods will be examined in depth in terms of their formal stylistic characteristics, their iconographical content, and their historical, social, economic, and religious context. Students will be expected to prepare several short papers.

Hist. of Art 263. TWENTIETH CENTURY ART (U,G)

Three hours credit. M T W Th F 9:30-10:45. Goldwin Smith 24. Mr. Waage.

Modern art, primarily painting, from the post-Impressionists to the present. An attempt is made to explain why the modern movement of art arose in the first place; then the course of its development is traced in the works of the more talented and influential artists. Since the period under study is much shorter, a more precise and thorough treatment of the individual styles of the artists and of the formal, or aesthetic, qualities of their creations is possible than in Hist. of Art 202. No practice of art is involved.

Hist. of Art 343. EARLY RENAISSANCE ART (U,G)

Four hours credit. M T W Th F 8-9:15. Goldwin Smith 21. Mr. Calkins.

A survey of the sculpture and painting, primarily in Italy in the fifteenth century, with emphasis on the major masters from Ghiberti and Donatello to Verrochio in sculpture and from Masaccio to Botticelli in painting. There will, however, be some discussion of the contributions of such northern masters as Jan van Eyck, Roger van der Weyden, and Albrecht Durer in order to compare northern and southern manifestations of the emerging Renaissance style.

## HOTEL ADMINISTRATION

## Typewriting

Hotel Adm. 37. TYPEWRITING (U,G)

Two hours credit. Hotel elective. Maximum enrollment limited to 35. M T W Th F 11–11:50. Statler 337. Mrs. Seaburg.

The personal needs of college students as well as the basic skills necessary for office jobs are met by this course in elementary typewriting. Instruction is given in the typing of business letters, reports, and tabulations. No previous typing skill is needed. Those who have had typing before may enroll in the course to improve their speed and accuracy.

See also Special Programs, p. 85.

## HUMAN DEVELOPMENT AND FAMILY STUDIES

HDFS 115. THE DEVELOPMENT OF HUMAN BEHAVIOR (U)

Three hours credit. Limited to 50 students. M T W Th F 11–12:15. MVR N207.

Provides a systematic analysis of the forces affecting human development from infancy to adulthood. Attention is focused on the interplay of biological factors, interpersonal relationships, social structure, and cultural values in changing behavior and shaping the individual. Special emphasis is given to the social implications of existing knowledge.

HDFS 500. SPECIAL PROBLEMS FOR GRADUATE STUDENTS (G)

Credit and hours to be arranged. S-U grades optional. Department faculty.

For graduate students recommended by their chairman and approved by the head of the department and the instructor in charge for independent, advanced work.

HDFS 599. MASTER'S THESIS AND RESEARCH (G)

Credit and hours to be arranged. S-U grades optional. Registration with permission of the instructor and chairman of graduate committee. Department graduate faculty.

HDFS 699. DOCTORAL THESIS AND RESEARCH (G)

Credit and hours to be arranged. S-U grades optional. Registration with permission of the instructor and chairman of graduate committee. Department graduate staff.

See the Special Programs section for the following course:

HDFS 336u. METHODS AND MATERIALS WORKSHOP FOR TEACHERS AND AIDES IN PRESCHOOL PROGRAMS (U,G), p. 87.

## HUMAN NUTRITION AND FOOD

### HNF 500. SPECIAL PROBLEMS FOR GRADUATE STUDENTS (G)

Credit and hours to be arranged. Department faculty.

For graduate students recommended by their chairmen and approved by the instructor in charge for independent, advanced work. Experience in research laboratories in the Department may be arranged.

### HNF 599. MASTER'S THESIS AND RESEARCH (G)

Credit and hours to be arranged. S-U grades optional. Registration with permission of the instructor. Misses Armbruster, Hester, Mondy, Morrison, Rivers, Schwartz, and Young. Mrs. Devine, Mrs. Roe, Mrs. Sanjur, Mrs. Visnyei, and Mrs. Snook; Mr. Lutwak.

### HNF 699. DOCTOR'S THESIS AND RESEARCH (G)

Credit and hours to be arranged. S-U grades optional. Registration with permission of the instructor. Misses Armbruster, Hester, Mondy, Morrison, Rivers, Schwartz, and Young. Mrs. Devine, Mrs. Roe, Mrs. Sanjur, Mrs. Visnyei, and Mrs. Snook; Mr. Lutwak.

## INDUSTRIAL AND LABOR RELATIONS

### I&LR 250. SURVEY OF INDUSTRIAL AND LABOR RELATIONS (U,G)

Three hours credit. M T W Th F 9:30-10:45. Ives 112.

A survey for students in other divisions of the University. An analysis of the major problems in industrial and labor relations; labor union history, organization and operation; labor market analysis and employment practices; industrial and labor legislation and social security; personnel management and human relations in industry; collective bargaining; mediation and arbitration; the rights and responsibilities of employers and employees; the major governmental agencies concerned with industrial and labor relations.

### I&LR 302. CULTURAL AUTONOMY AND THE AMERICAN POLITICAL ECONOMY, 1837-1970 (U,G)

Three hours credit. M T W Th F 9:30-10:45. Ives 114. Mr. Korman.

An examination of the ways in which ethnic and race-conscious groups have acquired political power.

### I&LR 404. SOCIAL HISTORY OF AMERICAN WORKERS, 1873-1896 (U,G)

Three hours credit. M T W Th F 11-12:15. Ives 114. Mr. Korman.

A detailed examination of the "working lives" of men and women in agriculture and industry and of the ways some of their leaders and organizations tried to shape their fortunes through politics and collective bargaining.

### I&LR 510. ECONOMIC AND SOCIAL STATISTICS (U,G)

Three hours credit. No prerequisites. Lectures, M T W Th F 9:30-10:45. Ives 118. Laboratory, two sessions each week, to be arranged.

A nonmathematical course primarily for graduate students in the social studies without previous training in statistical method. Emphasis will be placed on discussion of technical aspects of statistical analysis and on initiative in selecting and applying statistical methods to research problems. The subjects ordinarily covered will include analysis of frequency distributions, time series (including index numbers), regression and correlation analysis, and selected topics from the area of statistical inference.

**I&LR 520. ORGANIZATIONAL BEHAVIOR I (G)**

Three hours credit. M T W Th F 9:30-10:45. Ives 216. Mr. Gruenfeld.

Survey of concepts and studies from the fields of individual and social psychology, selected for their pertinence to the area of organizational behavior. The relationship between research findings and application to organizational problems will be stressed. Consideration of individual differences of various kinds; attitude formation and its relation to social processes; factors affecting different kinds of learning; motivation and its relationship to productivity; perception and its relationship to evaluation of performance; leadership and the influence process; group formation and its effect on the individual and the organization.

**I&LR 571. COMPARATIVE STUDIES OF LEADERSHIP, POWER, AND AUTHORITY IN ORGANIZATIONS (U,G)**

Three hours credit. M T W Th F 8-9:15. Ives 216. Mr. Gruenfeld.

This course will deal with similarities and differences in leadership behavior, decision making, and motivation in preindustrial and industrial societies. Technological, political, and cultural differences that affect organizational behaviors will be examined. The implications for recruitment training and organizational development will be considered.

## MATHEMATICS

**Math. 111. ANALYTIC GEOMETRY AND CALCULUS (U)**

Three hours credit. Prerequisite, three years of college preparatory mathematics including trigonometry. M T W Th F 8-9:15. White B-25. Mr. Friedman.

Plane analytic geometry, differentiation and integration of algebraic and trigonometric functions, applications.

**Math. 112. ANALYTIC GEOMETRY AND CALCULUS (U)**

Three hours credit. Prerequisite, Mathematics 111 or the equivalent. M T W Th F 8-9:15. White 310. Mr. Levin.

Differentiation and integration of algebraic, trigonometric, logarithmic, and exponential functions with applications. Plane analytic geometry. Related topics, including polar coordinates, infinite series.

**Math. 121u. ANALYTIC GEOMETRY AND CALCULUS (U)**

Three hours credit. *June 30 to July 23*. Prerequisite, a thorough knowledge of trigonometry and exceptional aptitude for mathematics. Students must also register for Mathematics 122u. M T W Th F 9:30-10:45 and 2-3:15. White B-15. Mr. Livesay.

Emphasis on the mastery and techniques needed for further preparation in the sciences including engineering and advanced mathematics. Mathematics 121 and 122 together treat the following topics: plane analytic geometry through conics; differentiation and integration of polynomials with applications to rates, maxima, volumes, pressures, etc.; differentiation and integration of algebraic, trigonometric, logarithmic, and exponential functions, with applications; related topics including polar coordinates, parametric equations, and infinite series.

## 60 MATHEMATICS

### Math. 122u. ANALYTIC GEOMETRY AND CALCULUS (U)

Three hours credit. *July 26 to August 13*. Prerequisite, current registration in Mathematics 121u. M T W Th F 9:30–10:45 and 2–3:15. White B-15. Mr. P. J. Kahn.

See description under Mathematics 121u, p. 59.

### Math. 192. CALCULUS FOR ENGINEERS (U)

Four hours credit. Prerequisite, Math. 191 or its equivalent. M T W Th F 8–9:15, and F, 2–3:15. White B-29. Mr. West.

Transcendental functions, technique of integration and multiple integrals, vector calculus, analytic geometry in space, partial differentiation, applications. Text: Thomas, *Calculus and Analytic Geometry*, chaps. 7–15.

### Math. 200. BASIC CONCEPTS OF MATHEMATICS (U,G)

Three hours credit. Prerequisite, Mathematics 122 or its equivalent. M T W Th F 9:30–10:45. White B-9. Mr. Silver.

Primarily for undergraduates, particularly for prospective teachers and those with a cultural interest in mathematics. Set theory, logic, axiom systems, the real number field, other simple algebraic structures, cardinal numbers.

### Math. 213. ANALYTIC GEOMETRY AND CALCULUS (U,G)

Three hours credit. Prerequisite, Mathematics 112 or the equivalent. M T W Th F 11–12:15. White B-9. Mr. Hamilton.

Solid analytic geometry, partial derivatives, multiple integrals.

### Math. 294. ENGINEERING MATHEMATICS (U)

Three hours credit. Prerequisite, Math. 293. M T W Th F 8–9:15. Thurston 203.

Linear differential equations, quadratic forms and eigenvalues, differential vector calculus, applications. Text: Block, Cranch, Hilton, Walker, *Engineering Mathematics*, vol. 2.

### Math. 331. LINEAR ALGEBRA (U,G)

Four hours credit. Prerequisite, Mathematics 200 or 213 or the equivalent. M T W Th F 11–12:15. White B-25. Mr. Chase.

Vectors, matrices, and linear transformations. Affine and Euclidean spaces. Transformation of matrices. Eigenvalues. Emphasis on applications. The additional credit is earned through homework and additional reading.

### Math. 370. ELEMENTARY STATISTICS (U,G)

Four hours credit. Prerequisites, Mathematics 112, 122, or 108. M T W Th F 9:30–10:45. White B-29. Mr. Platek.

Topics in probability which are essential to an understanding of statistics; introduction to the principles underlying modern statistical inference and the rationale underlying choice of statistical methods in various situations. This is a terminal course, intended for those who will take no further work in this area. The additional credit is earned through homework and additional reading.

### Math. 381. ELEMENTARY MATHEMATICAL LOGIC (U,G)

Four hours credit. Prerequisite, Math 122 or 200 or consent of the instructor. M T W Th F 8–9:15. White 328. Mr. Nerode.

Propositional calculus via truth tables and as a formal axiomatic theory. Boolean algebras. Introduction to the predicate calculus.

INTRODUCTORY COLLEGE MATHEMATICS. See Agricultural Orientation 110, p. 35.

SEMINAR ON MATHEMATICAL ECONOMICS. See Economics 300, p. 44.

INTRODUCTORY ENGINEERING PROBABILITY. See IE&OR 9160, p. 49.

## MODERN FOREIGN LANGUAGES AND LITERATURE

### Division of Modern Languages

Secondary school students who have been admitted to a college for the coming academic year may take any language as undergraduate students.

An option is provided in French, German, etc. (where offered), as follows: the basic course sequence, 101 and 102, gives a thorough grounding in the language—listening, speaking, reading, and writing. It is conducted in small groups with native speakers as instructors. The elementary reading course sequence, 131*u* and 132*u*, concentrates on the comprehension of written texts.

For the basic course, all students who have had no previous preparation in the language they elect should register for course 101. Students who have taken previous course work in the language they elect will be placed in the appropriate course on the basis of College Entrance Examination Achievement scores which they must make available before registration.

Non-Cornell students, who cannot submit CEEB scores, must supply transcripts showing amount of language work done and report to the Division of Modern Languages for proper placement at the time of registration.

The 101 and 102 basic courses and the full course sequence—131*u*–132*u*—have four hours of classroom instruction per day plus independent study. For this reason students who register for these courses are not permitted to register for any other courses. Time and place of first class meeting for these courses will be listed in the Supplementary Announcement, which will be distributed on registration day.

### Linguistics and Foreign Languages

For those interested in linguistics and language teaching, the Division of Modern Languages offers the opportunity to combine an introduction to linguistics with a language course intended to increase students' speaking and reading skills to approximately the 700 CEEB achievement level.

Language teachers, students majoring in foreign languages, and M.A.T. candidates are referred to Linguistics 201 and the 203 course in French, German, Russian, and Spanish as listed on the following pages.

#### Ling. 201. INTRODUCTION TO THE SCIENTIFIC STUDY OF LANGUAGE (U,G)

Three hours credit. M T W Th F 12:30–1:45.

An introductory survey course designed to acquaint the student with the nature of human language and with its systematic study. In the Summer Session, attention is also given to applied linguistics and other topics suitable for language teachers.

## French

### Fr. 101. FRENCH BASIC COURSE I (U)

Six hours credit. Students who have previously studied any French must take the qualifying examination before registering for this course. See additional information above. Twenty hours of instruction each week. Mr. Benoit and staff.

### Fr. 102. FRENCH BASIC COURSE II (U)

Six hours credit. Students who have not completed French 101 must take the qualifying examination before registering for this course. See above. Twenty hours of instruction per week. Mr. Benoit and staff.

### Fr. 131u. FRENCH ELEMENTARY READING COURSE I (U,G)

Three hours credit. *June 30 to July 23*. Twenty hours of instruction per week. Mr. Benoit and staff.

Designed to help students acquire a reading knowledge of the language.

### Fr. 132u. FRENCH ELEMENTARY READING COURSE I (U,G)

Three hours credit. *July 26 to August 13*. Prerequisite, French 131u or its equivalent. Twenty hours of instruction each week. Mr. Benoit and staff.

A continuation of French 131u.

### Fr. 203. INTERMEDIATE CONVERSATION AND READING COURSE (U,G)

Three hours credit. M T W Th F 9:30-10:45. Lectures T and Th 11-11:50.

The course provides intensive verbal exercise in French in small classes with extensive reading, and is intended to produce a sharp improvement in verbal and reading skills. The course is open to students who have reached approximately the 560 CEEB achievement level and has the goal of raising their foreign language skills to the 700 level. The CEEB examination will be given at the end of the course.

Prospective teachers and teachers now in service will find the course especially appropriate for their needs. (See also Linguistics and Foreign Languages, p. 61.)

## German

### Germ. 101. GERMAN BASIC COURSE I (U)

Six hours credit. Students who have previously studied any German must take the qualifying examination before registering for this course. See additional information, p. 61. Twenty hours of instruction each week. Mr. Lowe and staff.

### Germ. 102. GERMAN BASIC COURSE II (U)

Six hours credit. Students who have not completed German 101 must take the qualifying examination before registering for this course. See p. 61. Twenty hours of instruction per week. Mr. Lowe and staff.

### Germ. 131u. GERMAN ELEMENTARY READING COURSE (U,G)

Three hours credit. *June 30 to July 23*. Twenty hours of instruction per week. Mr. Lowe and staff.

Designed to help students acquire a reading knowledge of the language.



Germ. 132u. GERMAN ELEMENTARY READING COURSE (U,G)

Three hours credit. *July 26 to August 13*. Prerequisite, German 131u or its equivalent. Twenty hours of instruction each week. Mr. Lowe and staff.

A continuation of German 131u.

Germ. 203. INTERMEDIATE CONVERSATION AND READING COURSE (U,G)

Three hours credit. M T W Th F 9:30-10:45. Lectures T and Th 11-11:50.

The course provides intensive verbal exercise in German in small classes with extensive reading, and is intended to produce a sharp improvement in verbal and reading skills. The course is open to students who have reached approximately the 560 CEEB achievement level and has the goal of raising their foreign language skills to the 700 level. The CEEB examination will be given at the end of the course.

Prospective teachers and teachers now in service will find the course especially appropriate for their needs. (See also Linguistics and Foreign Languages, p. 61.)

## Russian

Russ. 101. RUSSIAN BASIC COURSE (U)

Six hours credit. Students who have previously studied any Russian must take the qualifying examination before registering for this course. See additional information, p. 61. Twenty hours of instruction per week. Mr. Foos and staff.

Russ. 203. INTERMEDIATE CONVERSATION AND READING COURSE (U,G)

Three hours credit. M T W Th F 9:30-10:45. Lectures T and Th 11-11:50.

The course provides intensive verbal exercise in Russian in small classes with extensive reading, and is intended to produce a sharp improvement in verbal and reading skills. The course is open to students who have reached approximately the 560 CEEB achievement level and has the goal of raising their foreign language skills to the 700 level. The CEEB examination will be given at the end of the course.

Prospective teachers and teachers now in service will find the course especially appropriate for their needs. (See also Linguistics and Foreign Languages, p. 61.)

## Spanish

Span. 101. SPANISH BASIC COURSE (U)

Six hours credit. Students who have previously studied any Spanish must take the qualifying examination before registering for this course. See additional information, p. 61. Twenty hours of instruction per week. Mr. Lozano and staff.

Span. 131u. SPANISH ELEMENTARY READING COURSE (U,G)

Three hours credit. *June 30 to July 23*. Twenty hours of instruction per week. Mr. Lozano and staff.

Designed to help students acquire a reading knowledge of the language.

Span. 132u. SPANISH ELEMENTARY READING COURSE (U,G)

Three hours credit. *July 26 to August 13*. Prerequisite, Spanish 131u or its equivalent. Twenty hours of instruction each week. Mr. Lozano and staff.  
A continuation of Spanish 131u.

Span. 203. INTERMEDIATE CONVERSATION AND READING COURSE (U,G)

Three hours credit. M T W Th F 9:30-10:45. Lectures T and Th 11-11:50.

The course provides intensive verbal exercise in Spanish in small classes with extensive reading, and is intended to produce a sharp improvement in verbal and reading skills. The course is open to students who have reached approximately the 560 CEEB achievement level and has the goal of raising their foreign language skills to the 700 level. The CEEB examination will be given at the end of the course.

Prospective teachers and teachers now in service will find the course especially appropriate for their needs. (See also Linguistics and Foreign Languages, p. 61.)

## English as a Second Language

### June 30-August 13

Intensive courses in English for speakers of other languages will be given as part of the Summer Session. Modern methods of teaching language will be used to provide greater fluency and comprehension of both oral and written English.

These courses are designed with particular attention to the requirements of nonnative English speakers who plan to attend institutions of higher learning and whose lack of fluency may hinder them. *No beginning students will be accepted.*

A diagnostic test will be administered to all students admitted to the courses during the first week of classes. Students will attend classes four hours a day, and language laboratory facilities will be available.

Engl. 211u. ENGLISH AS A SECOND LANGUAGE (U,G)

Three hours credit. *June 30 to July 23*. Prerequisite, placement by the instructor. Twenty hours of instruction per week. Mr. Elliott.

Engl. 212u. ENGLISH AS A SECOND LANGUAGE (U,G)

Three hours credit. *July 26 to August 13*. Prerequisite, English 211u. This is a continuation of English 211u. Twenty hours of instruction per week. Mr. Elliott.

Time and place of first class meetings will appear in the Supplementary Announcement available on registration day.

For languages other than those offered by the Division of Modern Languages, see:

Classics—Greek and Latin, p. 41.

Latin American Language and Area Program—Quechua, p. 89.

Cornell German Program in Heidelberg, p. 85.

Chinese Summer Language Program, p. 76.

## MUSIC

### Music 101. THE ART OF MUSIC (U,G)

Three hours credit. M T W Th F 11-12:15. Lincoln B-22. Mr. Green.

Intended mainly for students with little or no formal training in music. The course will survey some basic principles of music in the eighteenth and nineteenth centuries and show how they are related to both serious and popular music in our own day.

### Music 103. A SURVEY OF VOCAL MUSIC (U,G)

Three hours credit. No prerequisites. M T W Th F 9:30-10:45. Lincoln B-22. Mr. Sokol.

Lectures, guest performances, and class participation based on the principal vocal forms from the Middle Ages to the present time, including chants, madrigals, motets, masses, oratorios, cantatas, folk songs, and art songs.

### Music 111. SAGE CHAPEL CHOIR (U)

One hour credit. Registration limited to members of the summer choir who are also registered for another course or courses in Summer Session. Rehearsals, Tuesday evenings 7:15-9 and Sunday mornings 9:30. Sage Chapel. Mr. Paterson.

Membership in the choir is not limited to persons who register for the course.

See also Summer Arts Festival, pp. 98-99.

### Music 457u. COMPOSITION (COMPOSERS WORKSHOP) (G)

Three hours credit. *July 12 to July 30*. Registration only by consent of the instructor. M W F 9-12. Lincoln 121. Mr. Palmer.

The Composers Workshop is a component of the Summer Arts Festival. For further information see p. 99.

### Music 464u. CHORAL STYLE (U,G)

Two hours credit. *July 11 to July 24*. Registration only by consent of the instructor. M T W Th F 4-5:30; 7:30-9 P.M. Barnes Hall Auditorium. Mr. Sokol.

Available to participants in the Choral Music Program. See Summer Arts Festival, pp. 98-99.

## PHILOSOPHY

### Phil. 212. INTRODUCTION TO LOGIC (U)

Four hours credit. M T W Th F 9:30-10:45. Goldwin Smith 256. Mr. Mueller.

The analysis and evaluation of reasoning in terms of formalized languages (the sentential calculus and the first-order predicate calculus with identity).

### Phil. 305. SPECIAL TOPICS IN THE HISTORY OF PHILOSOPHY (U,G)

Four hours credit. M T W Th F 11-12:15. Goldwin Smith 256. Mr. Mueller.

A study of Plato's early and mature dialogues, ending with the *Republic*.

## PHYSICS

**\*Physics 105. TOPICS IN MODERN PHYSICS (U)**

Three hours credit. Prerequisites, three units of college preparatory mathematics and a one-year course in either secondary or college physics, and consent of the instructor. M T W Th F 10-12. One weekly two-hour lecture (usually on Mondays), a two-hour seminar-discussion on each of three days of the week, and one weekly two-hour meeting either for additional lectures or for viewing and discussing pertinent instructional movies. Except for the common Monday lectures and for the additional lectures or movies, students are subdivided into class-study groups according to interests, background, and preparation. Physics 105 is not equivalent to Physics 101, 112, 201, or 207 of the academic year. Lectures, Rockefeller B. Mr. Richardson.

Principle topics will probably be special relativity and quantum theory. Fee, \$5.

**\*Physics 112. INTRODUCTORY ANALYTICAL PHYSICS I (U)**

Four hours credit. Prerequisite, one year of secondary school physics and Math. 111, or consent of instructor. Lectures, M T W Th, Rockefeller 105, and F, Rockefeller A, 11-12:15; seminars and laboratory, T W Th F, Rockefeller 252, 2-5. One additional class meeting to be arranged.

The mechanics of particles: kinematics, dynamics, conservation of linear momentum, central-force fields, conservation of energy, periodic motion. The mechanics of many-particle systems: center of mass, angular momentum of a rigid body, simple rotational mechanics of a rigid body. Introduction to special relativity: invariance of velocity of light, Lorentz transformation, relativistic momentum and energy. At the level of *Mechanics and Heat*, by Young. Fee, \$5.

**\*Physics 208. FUNDAMENTALS OF PHYSICS (U)**

Four hours credit. Prerequisites, Physics 112 or 207 and at least simultaneous enrollment in Math. 112, or consent of the instructor. (No credit will be granted if the student has credit for Physics 102 or 233, or the equivalent.) Lectures, M, Rockefeller A, and T W Th F, Rockefeller 103, 9:30-10:45; seminars and laboratory, M T W Th F, Rockefeller 322-324, 2-5.

A continuation from Physics 207. Electricity and magnetism, laws of thermodynamics, electromagnetic waves, polarization, diffraction, interference, the wave-particle properties of matter and an introduction to the ideas of quantum mechanics. At the level of *Physics, Part II*, 1966, by Resnick and Halliday. Fee, \$5.

**Physics 234. INTRODUCTORY ANALYTICAL PHYSICS IV (U)**

Three hours credit. Prerequisites, Physics 233 and at least simultaneous registration in Math. 294, or consent of the instructor. Lectures, T Th, 11-12:15, Rockefeller A. Recitations, M W F S 11-12:15, Rockefeller 104.

Modes of oscillation, waves, polarization, interference, and diffraction. Selected topics from contemporary physics such as relativity, quantum effects, atomic and x-ray spectra, nuclear structure and reactions, and solid state physics. At the level of *Fundamentals of Optics and Modern Physics*, 1968, by Young.

**\*Physics 236. LABORATORY TO ACCOMPANY PHYSICS 234 (U)**

One hour credit. Prerequisite, Physics 235 and coregistration in Physics 234, or consent of the instructor. T F, 2-5. Rockefeller 30.

Experiments in optics and contemporary physics. Fee, \$5.

**\*Physics 360. INTRODUCTORY ELECTRONICS (U,G)**

Three hours credit. Prerequisites, Physics 208 or 234 (and preferably 310), or consent of the instructor. Lectures and laboratory, M T W Th F 2-5, Clark 309. Mr. Maxfield.

Introduction to the principles of semiconductor devices, of electronic components and circuits, and to the operating characteristics of power supplies, amplifiers, oscillators, switching and timing circuits, etc. Knowledge of methods and techniques invaluable to the student who plans experimental work in almost any field involving modern instruments. At the level of *Elementary Electronics*, 1966, by White; or *Basic Electronics for Scientists*, 1966, by Brophy. Fee, \$10.

**\*Physics 500. INFORMAL GRADUATE LABORATORY (G)**

One or two hours credit. Prerequisites, Physics 236, 310 or 360, and a junior-senior course in contemporary physics (e.g., Physics 436), or consent of the instructor. Laboratory open M T W Th F 2-5. Clark 308. Mr. Browman and staff.

This laboratory is associated with the Physics 510 laboratory; see topics in Physics 510, listed in the Special Programs Section, p. 92. Fee, \$5 per credit hour.

## PSYCHOLOGY

**Psych. 101. INTRODUCTION TO PSYCHOLOGY: BASES OF HUMAN BEHAVIOR (U)**

Three hours credit. M T W Th F 9:30-10:45. Goldwin Smith D. Mr. Du Cette.

Emphasizes the study of human behavior from the standpoint of the basic processes. Topics include brain functioning, dreaming, intelligence, psychological testing, perception, learning, motivation, emotion, abnormal behavior, and psychiatry. The course centers upon contemporary problems confronting psychologists and is supported by films, guest speakers, and discussion seminars.

Introduction to Psychology: Development of Human Behavior, see HDFS 115 p. 57.

**Psych. 102. INTRODUCTION TO PSYCHOLOGY: PERSONALITY AND SOCIAL BEHAVIOR (U)**

Three hours credit. M T W Th F 11-12:15. Goldwin Smith 177. Mr. Truzzi.

An examination of personality and social influences on the individual's adjustment to himself, his environment, and his social group. Both classic and contemporary viewpoints will be considered and evaluated in the light of empirical evidence.

**Psych. 215. LINGUISTICS AND PSYCHOLOGY (U,G)**

Three hours credit. M T W Th F 11-12:15. Morrill 310. Mrs. Catlin.

An introductory course covering the recent development of a new field of study based on psychology and linguistics. Topics covered will be the nature of language and its acquisition, the influence of the sounds and grammar of language on perception and memory, bilingualism, dialects, and recent experimental techniques for teaching reading.

**Psych. 284. SOCIAL PSYCHOLOGICAL THEORIES AND APPLICATIONS (U,G)**

Three hours credit. M T W Th F 8-9:15. Morrill 340. Mr. Meltzer.

A selective survey of approaches—theoretical or empirical—which have some relevance to understanding or ameliorating social and personal problems. Attempts to utilize social psychology in the real world will be reviewed. Specifically, the effectiveness of various behavior modification techniques (such as conditioning and psychoanalytic therapies, conformity pressures, attitude change programs, participatory and sensitivity training practices, role playing, motivational development institutes, and interventions in social structures) will be evaluated in relation to specific practical goals (such as the control of smoking, increases in committee effectiveness, facilitation of individual creativity, acceleration of economic development of underdeveloped countries, or decreases in intergroup hostility).

**Psych. 305. PERCEPTION: ART AND MUSIC (U,G)**

Three hours credit. M W Th 1:30-3:30. Morrill 340. Mr. Barrand.

The perception of art and music has traditionally been treated as a set of problems in the philosophy of criticism, i.e., aesthetics. This approach has been limited by the lack of an overall psychological model of explanation. This course examines the perception, appreciation, evaluation, creation, etc., of 'aesthetic objects' in various art forms by making use of the orientation to perception inherent in the work of James J. Gibson. The first half of the course will develop a general descriptive system for a psychology of aesthetics, incorporating examples from the visual arts and music. The latter half will involve various demonstrations and experiments on art and folk music, aimed at specifying the information (e.g., distinctive features, invariants) in visual and musical displays.

**Psych. 310. HUMAN LEARNING AND MEMORY (U,G)**

Three hours credit. M T W Th F 9:30-10:45. Morrill 340. Mr. Roberts.

An experimental approach to basic processes in learning and memory. Topics include verbal learning, short-term and long-term memory, mnemonics and strategies of learning, skilled performance, etc.

**Psych. 313. INTRODUCTION TO HUMAN COGNITION (U,G)**

Three hours credit. Prerequisite, a course in psychology or consent of instructor. M T W Th F 9:30-10:45. Morrill 310. Miss Long.

Introduction to human cognition, emphasizing language, thought, and memory. Specific topics to be discussed include imagery, speech perception, concept formation, attention and memory, and relation between language and thought. There will be numerous classroom demonstrations to accompany discussions.

**Psych. 326. COMPARATIVE PSYCHOLOGY (U,G)**

Three hours credit. M T W Th F 11-12:15. Morrill 340. Miss West and Mr. King.

This course will investigate the rationale behind the study of animal behavior by psychologists, going beyond description and attempting to deal with the processes and mechanisms of such behavior throughout the phyletic scale, including man. Emphasis will be placed upon the articulation of psychological processes, rather than upon the explication of specific physiological mechanisms.

The course will provide an overview of the historical and philosophical roots of the study of animal behavior, with stress upon the development of

the divergence of European ethology and American comparative psychology from a common origin (e.g., Darwin, Romanes, McDougall, G. S. Hall, C. L. Morgan, Heinroth, etc.). Relevant data (e.g., egg rolling in the Greylag goose, conditioning in planaria, use of tools by animals, imprinting, perceptual learning) for the development of comparative psychology and ethology will be considered. The learning-instinct dichotomy will be used as a convenient conceptual framework for these discussions.

Students with an interest in biology, psychology, zoology, evolution, and problems in animal behavior are encouraged to take the course.

Psych. 480. ATTITUDE THEORY (U,G)

Four hours credit. M T W Th F 1:30-2:45. Morrill 310. Mr. Meltzer.

Not a survey. A single family of approaches, known collectively as cognitive consistency theory, will be studied in depth. Lectures and discussions will closely parallel readings from classic sources, including: *The Psychology of Interpersonal Relations* by Fritz Heider; *A Theory of Cognitive Dissonance* by Leon Festinger; *The Acquaintance Process* by Theodore Newcomb; *Beliefs, Attitudes, and Values* by Milton Rokeach; *Attitude Organization and Change* by Milton Rosenberg; and *Cognitive Consistency* by Shel Feldman.

Psych. 481. ADVANCED SOCIAL PSYCHOLOGY (U,G)

Four hours credit. Prerequisite, a course in social psychology. M W and F 2-4:30. Goldwin Smith 177. Mr. Truzzi.

Emphasis is on the empirical study of social psychological phenomena. Consideration will be given to the social psychology of the occult and the occult movement in the United States. Also listed under Sociology 481, p. 70.

See also I&LR 520. ORGANIZATIONAL BEHAVIOR I (G), p. 59.

## RURAL SOCIOLOGY

Rur. Soc. 475. THE BLACK EXPERIENCE IN RURAL AMERICA (U,G)

Three hours credit. M T W Th F 8-9:15. Warren 260. Mrs. Minnie M. Brown.

The black experience will be traced through the Colonial period up to contemporary times. Early focus will be on plantation economics and the black community; its institutions, leadership, problems of adaptation, and adjustment. An underlying theme will be the evolution of educational programs for the disadvantaged groups.

## SOCIOLOGY

Soc. 101. MAN AND SOCIETY (U)

Three hours credit. M T W Th F 8-9:15. McGraw 165. Mr. Ritzer.

An introduction to the principal concepts and perspectives of contemporary sociology. Course is organized around illustrative sociological research and offers experience with the data and techniques of the discipline.

Soc. 272. URBAN COMMUNITIES (U,G)

Three hours credit. Prerequisite, a course in the social sciences. M T W Th F 9:30-10:45. Goldwin Smith 177.

The study of urban aggregates as ecological, social, and cultural systems. The structure of urban communities will be studied both from the perspective of the larger, environing social and cultural system and from the perspec-

## 70 THEATRE ARTS

tive of internal relationships of institutions within the community. Patterns of community power structure and political participation will be examined within this context.

### Soc. 364. SOCIAL CONFLICT AND CONFLICT RESOLUTION (U,G)

Four hours credit. Prerequisite, two courses in the social sciences. M T W Th F 11-12:15. Goldwin Smith 164. Mr. Williams.

Analysis of conflict, competition, and cooperation as social processes. Review of research on causes of major types of contemporary conflict within national societies. Study of the relation of conflict to social structure and social change. Examination of outcomes of conflict and analysis of "constructive" and "destructive" modes of terminating or resolving conflicts.

### Soc. 481. ADVANCED SOCIAL PSYCHOLOGY (U,G)

Four hours credit. Prerequisite, a course in social psychology. M W and F 2-4:30. Goldwin Smith 177. Mr. Truzzi.

Emphasis is on the empirical study of social psychological phenomena. Consideration will be given to the social psychology of the occult and the occult movement in the United States. Also listed under Psychology 481, p. 69.

See also I&LR 520. ORGANIZATIONAL BEHAVIOR I (G), p. 59.

Rur. Soc. 475. THE BLACK EXPERIENCE IN RURAL AMERICA (U,G), p. 69.

## THEATRE ARTS

### Th. Arts 280. BEGINNING ACTING (U,G)

Three hours credit. M T W Th F 9:30-10:45. Lincoln 304. Mr. Stelzer.

Introduction to the problems and basic techniques of contemporary acting. Practice in creative exercises, pantomime, improvisation, physical and imaginative script interpretation.

### Th. Arts 300. DIRECTED STUDIES (U,G)

Credit and hours to be arranged. Students participating in the Dance Program, who wish credit may register in this course for the number of credit hours approved by the instructor. See Summer Arts Festival, p. 103.

### Th. Arts 343. WAR AND PEACE AS DRAMATIC THEMES (U,G)

Three hours credit. M T W Th F 9:30-10:45. Lincoln 302. Mr. Carlson.

A study of man's concern with the problem of war through analysis of such representative plays as Euripides' *Trojan Women*, Aristophanes' *Lysistrata*, Marlowe's *Tamburlaine*, Shakespeare's *Henry IV* and *Troilus and Cressida*, Corneille's *Horace*, Schiller's *Maid of Orleans*, Strindberg's *Gustavas Adolphus*, Shaw's *Bury the Dead*, Brecht's *Mother Courage*, and Heller's *We Bombed In New Haven*.

### Th. Arts 344. BRECHT AND THE ABSURDIST: TWO APPROACHES TO MODERN THEATRE (U,G)

Three hours credit. M T W Th F 11-12:15. Lincoln 302. Mr. Carlson.

The theory and practice of epic and absurdist theatre; their contrasting views of man and society, and their dramatic techniques. Certain important critical works will be read, and selected plays by Brecht, Beckett, Ionesco, Genet, Albee, and others will be studied.



**\*Th. Arts 370. FILM PRODUCTION STUDIO (U,G)**

Six hours credit. Enrollment limited to 30 students. Special application form required. M T W Th F 9-12 and other studio hours (mornings, afternoons and evenings). Lincoln B-1 and other film facilities. Mr. Beck and visiting artists.

An intensive studio program in which students will be involved with the process of professional filmmaking. A professional filmmaker and staff of experienced technicians will be in residence to produce an independent film during the term. Students will participate in the various phases of filmmaking and will observe at first hand the style and technique of the visiting artist.

This is a component of the Summer Arts Festival. See page 104. Special application forms and other information are available from: Professor Gordon Beck, 112 Lincoln Hall, Cornell University, Ithaca, New York 14850. Students wishing to be assured of space should return the special applications no later than May 31.

TYPEWRITING. See Hotel Admin. 37, p. 57.

## SPECIAL PROGRAMS OF THE SUMMER SESSION

The Special Programs of the Summer Session are designed, in most cases, to serve a specific clientele in a particular discipline. Special Programs are often scheduled for periods not consistent with the regular Summer Session offerings, and tuition rates, application procedures, registration process, etc., may also vary from the Summer Session procedures. The variations are noted in the descriptions of each program.

Additional Special Programs may be added before the session begins. For a listing of these additions, write to the Dean of Summer Session, B-20 Ives Hall, Cornell University, Ithaca, New York 14850.

In certain programs it is possible for a student registered in the regular Summer Session to elect a course from a Special Program as part of his schedule. Likewise, depending on the date the program begins, a student admitted to a Special Program may add a course from the Summer Session listings to complete his summer studies. *In all cases of this nature, the Summer Session tuition rate of \$70 per credit hour and \$5 per week general fee will apply for the elected course rather than the rate specified for the Special Program.* (See Tuition and Fees, pp. 14-15.) Registration in a course in a Special Program must have the approval of the director of that program.

Applicants for admission to a Special Program do not use the application form provided in the back of this *Announcement*. Instructions for requesting further information and application forms accompany the descriptions of the following Special Programs.

## ADVANCED PLACEMENT PROGRAM FOR SECONDARY SCHOOL JUNIORS

### June 30-August 13

The Advanced Placement Program for Secondary School Juniors, open only to academically talented students who will have completed the eleventh year in secondary school by June 1971, is offered to enable college-bound students to achieve advanced placement in college.

The program offers college-level courses in anthropology, biological sciences, chemistry, classical Greek, comparative literature, computer science, economics, English, geological science, government, human development, French, German, Russian, Spanish, mathematics, physics, psychology, and sociology. Students may earn a minimum of six credit hours to be recorded with the registrar of Cornell University for subsequent transfer as desired. The program requires full-time study for the six-week session.

Special provisions are made for housing, dining, and counseling services. The usual health services and all extracurricular activities provided in the Summer Session are made available. The total charge to each student is \$600. This covers all costs except textbooks and personal expenses.

Brochures regarding this program were mailed in January and the deadline has passed for requesting application forms for the 1971 program. Those interested in the 1972 program may receive further information by writing to the Director, Advanced Placement Program, Secondary School Juniors, 158 Olin Hall, Cornell University, Ithaca, New York 14850.

## TOPICS IN MODERN PHYSICS FOR HIGH-ABILITY SECONDARY SCHOOL STUDENTS

Supported by the National Science Foundation

June 30–August 13

Topics in Modern Physics for High-Ability Secondary School Students is a program designed for secondary school students who will have completed eleventh grade. It provides a superior opportunity in physics, in both classroom and laboratory, to supplement the usual offerings in the secondary school. The program is designed:

- (1) to impart to the student some of the exciting adventure of physical science in our present-day culture,
- (2) to facilitate self-evaluation of the student's personal interest in science, and
- (3) to provide a meaningful first exposure to the academic atmosphere of the college.

This program will not duplicate or take the place of any conventional college course, but it will supplement the secondary-school physics experience by a treatment in depth of some fundamental physical concepts and theories, and by independent experimental work in a well-equipped laboratory.

Brochures regarding this program were mailed in January and the deadline has passed for requesting application forms for the 1971 program. Those interested in the 1972 program may receive further information by writing to Professor R. C. Richardson, Director, Topics in Modern Physics, Clark Hall, Cornell University, Ithaca, New York 14850.

## AGRICULTURAL EDUCATION SUMMER PROGRAM

July 12–30

Three-week unit courses in technical agriculture and education are available to teachers of agriculture and other professional workers in agricultural education. The three-week courses provide an opportunity for professional improvement without the need for extended leaves of absence from positions.

Graduate credit earned in these three-week unit courses may be applied toward the Cornell residence requirement for the professional degrees but not for other Cornell graduate degrees. Students desiring to become candidates for a professional degree should also register in the Graduate School (see pp. 16–17). The courses may also be applied toward meeting certification requirements.

Final registration for the three-week session will take place on July 12, 1971, at a time and place to be announced.

A one-week Natural Resources Institute is also available to teachers of agriculture and other professional workers. See listings on p. 75.

For further information, address Director, Agricultural Education Summer Program, Stone Hall, Cornell University, Ithaca, New York 14850.

A complete outline of the course offerings follows:

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### \*Agron. 406u. USE OF SOIL INFORMATION AND MAPS AS RESOURCE INVENTORIES (U,G)

Two hours credit. *July 12 to July 30.* Lectures, M T W Th F 8-9:50. Laboratories to be arranged. Bradfield 105. Mr. Olson.

Principles, practices, and research techniques in interpreting soil information and maps for planning, developing, and using areas of land. Capability, suitability, and limitation groupings of soils. Alternative uses of soils in the rural-suburban-urban transition areas. Fee, \$5.

### \*Agr. Engr. 415u. AGRICULTURAL ELECTRIFICATION (U,G)

Two hours credit. *July 12 to July 30.* M T W Th F 10-11:50 and M T Th 1-4, Riley-Robb 60, 64, 70. Mr. Lechner.

Course includes instruction and laboratory practice in the applications of electrical power to agriculture. Also included are such topics as principles of electricity, wiring, motor selection and maintenance, and electrical safety. The course is designed primarily for vocational teachers, but any interested student may enroll. Fee, \$5.

### \*Flori. 360u. LANDSCAPE ARCHITECTURE DESIGN AND WOODY PLANT MATERIALS (U,G)

Four hours credit. *July 12 to July 30.* Prerequisite, consent of instructor. Enrollment limited to 30 students. Lectures and laboratory, M T W Th F 8-12 and 1-4, Plant Science 433. Messrs. Carpenter, Dwelle, and Mower.

Basic knowledge and problems in landscape architecture design and construction. Identification and cultural features of woody plant material together with their use in landscape plans is also stressed. Fee, \$15.

### Ed. 433u. SPECIAL PROBLEMS. CURRICULUM CONSTRUCTION IN AGRICULTURAL EDUCATION (U,G)

Credit to be arranged. *July 12 to July 30.* M T W Th F 10-11:50. Warren 232. Staff.

The application of the modular concept to curriculum development in agricultural education will be stressed. Performance objectives will be prepared and modules of instruction developed in the various areas of agriculture.

### Ed. 534u. EDUCATION FOR LEADERSHIP OF YOUTH AND ADULT GROUPS (G)

Two hours credit. *July 12 to July 30.* M T W Th F 8-9:50. Warren 232. Mr. Cushman.

Designed for leaders in the field of agricultural education who are responsible for organizing programs. A consideration of the principles involved in organizing and conducting out-of-school programs for young and adult groups.

### Ed. 499u. INFORMAL STUDY IN EDUCATION (U,G)

Two hours credit maximum. Consent of instructor required. Staff.

### Ed. 500u. SPECIAL STUDIES IN EDUCATION (G)

Credit and hours as arranged. Consent of instructor required. Staff.

Students working on theses or other research projects may register for this course.

## Natural Resources Institute

July 5-9

Two concurrent one-credit-hour courses in natural resources management are offered. Students may enroll for only one course. These courses are designed as subject background for those who train and counsel skilled and/or para-professional workers in natural resource management fields. Preference is given to occupational teachers in secondary schools and interested college instructors. Others will be admitted if space permits. Enrollment in each course is limited to sixty students.

The Institute convenes at noon, Monday, July 5, and daily thereafter from 8:30 A.M. to 4:30 P.M. Three evening sessions also will be scheduled. All instruction is presented at the Cornell Arnot Conservation Education Center. Meals and lodging are available at this location. Inquiries should be addressed to Professor W. E. Drake, Department of Education, Stone Hall, Cornell University, Ithaca, New York 14850.

### Consv. 305u. ECOLOGICAL BASIS OF ENVIRONMENTAL CONSERVATION (U,G)

One hour credit. *July 5 to July 9.* No prerequisite. Lectures and field trips. Mr. Brumsted and staff.

An introduction to the ecological aspects of present day environmental quality problems, and review of the application of ecological principles in natural resource management practices.

### \*Consv. 505u. PRINCIPLES AND PRACTICES OF SMALL SAWMILL MANAGEMENT AND MAINTENANCE (U,G)

One hour credit. *July 5 to July 9.* No prerequisite. Lectures and field trips. Messrs. Dickson, Winch and staff.

Power requirements, safety engineering, business skills and management, for small operators. Laboratory fee, \$20.

## ARCHITECTURE SUMMER TERM

Mid-June through July

A summer term will be offered in the Field of Architecture if there is student demand for it and adequate faculty available. The term is of six to eight weeks' duration, starting in June and ending in late July. It is offered at both graduate and undergraduate levels and carries credit for successful work.

At the undergraduate level, the time is devoted exclusively to one subject, architectural design, credited as Elective Design 119. Six to eight hours of credit will be given for successful completion of the work. By petition of the student it may be considered one term of design as required in the curriculum. The number of hours of credit in excess of those required for the sequence of study may be allocated to elective credit hours.

Registration will be limited to students of satisfactory standing who have completed the sophomore year of study. However, students of better-than-average ability and performance may petition the faculty for summer term enrollment after completion of freshman design. Two summer terms in consecutive years will not be permitted without the approval of the faculty.

Students from schools of architecture other than Cornell are invited to apply to the College for admission to the program.

At the graduate level, the summer term is devoted to problems forming part of the student's program of work. The term may carry residence credit equal to that of a normal academic term. Participation in the program cannot be undertaken without the consent of the student's adviser.

For further information write to the Director, Architecture Summer Term, East Sibley Hall, Cornell University, Ithaca, New York 14850.

## CHINESE SUMMER LANGUAGE PROGRAM

Offered by the Division of Modern Languages

June 9–August 13

Two courses are being offered by the Division of Modern Languages, one on a ten-week basis, and one for eight weeks. Tuition and fees will be charged at the same rate as for the regular Summer Session; \$70 per credit hour for tuition and \$5 per week general fee.

Registration for both courses will be held at the Summer Session Office, B-20 Ives Hall, on the first day of class meeting at a time of day that does not interfere with attendance in class. The Summer Session Office is open from 8 A.M. to 5 P.M. Registration will therefore be on June 9 for Chinese 101C–102C and on June 21 for Chinese 301–302. Persons interested in applying for either course should use the application form in the back of this *Announcement*.

### Chin. 101C–102C. INTENSIVE ELEMENTARY CANTONESE (U,G)

Twelve hours credit. *June 9 to August 13*. Twenty hours of instruction per week for ten weeks. Time and place of class meetings to be arranged. Mr. McCoy and Mrs. Fessler.

Conversational Cantonese and introductory readings in modern written Chinese. Written and spoken materials will be presented in the standard pronunciation of Hong Kong and Canton.

### Chin. 301–302. INTENSIVE INTERMEDIATE MANDARIN (U,G)

Eight hours credit. *June 21 to August 13*. Prerequisite, the equivalent of twenty credit hours of Chinese. Twenty hours of instruction a week for eight weeks. Time and place of class meetings to be arranged. Mr. McCoy and Mrs. Ni.

Conversational drill in Mandarin and readings in modern expository style. To the greatest extent possible selection of reading material will be made on the basis of the academic interests of the students.

## CITY AND REGIONAL PLANNING

Continuing Education in Planning

June 13–18

The ninth annual offering of short courses by the Department of City and Regional Planning is intended to serve the needs of professionals in city and regional planning and related fields such as urban renewal, community and regional development, and health or social services planning.

The courses described below will be offered concurrently. No academic credit is awarded, but a certificate is issued attesting to participation and successful completion for each course.

Tuition and fees for each course: \$200. That sum includes housing in University facilities. A limited number of scholarships may be offered.

For further information and application forms, address the Director of Planning Extension Programs, Department of City and Regional Planning, B40 East Sibley Hall, Cornell University, Ithaca, New York 14850.

#### DEPRESSED AREA PLANNING

Professors Pierre Clavel, William W. Goldsmith, and guest lecturers.

Problems, techniques, and strategies for development of lagging regions in the United States. Review of procedures for measuring economic inadequacy, identifying growth centers, and data banking. Critique of economic development planning practices, the preparation of area development programs and plans, and allocation of federal and state grants and loans. Special attention will be devoted to possible innovations in these and other regional development planning operations, based on recent developments in the social sciences, and on a comparative analysis of planning policies in other nations.

#### DATA PROCESSING AND GOVERNMENT INFORMATION SYSTEMS IN PLANNING

Mr. Jon Lang and guest lecturers.

A basic introduction to the field designed to provide an opportunity for practitioners to become familiar with programming, equipment, and procedures. No prior knowledge or experience is necessary. Design and implementation of application to planning, equipment use, data reduction and analysis, programming case studies.

#### HISTORIC PRESERVATION PROGRAMS

Professors Stephen W. Jacobs, Barclay G. Jones, Mrs. Constance Werner Ramirez, and guest lecturers.

An introduction to preservation planning for private citizens, urban planners, and other professionals; and introduction not only to the means of safeguarding our heritage, but also to the opportunity to use the values of sites and buildings of previous times as resources for planning for the future. In addition to discussions of case studies and the underlying social-psychological basis for preservation, there will be lectures on survey techniques, visual programming, scenic and historic legal controls, private involvement, and the potential of federal, state, and local programs for preservation planning.

#### INTRODUCTION TO SOCIAL PLANNING

Mrs. Janet Reiner and guest lecturers.

Planning social services such as health, education, and welfare requires: (1) substantive knowledge of policy, planning, and programming in these fields; (2) development of approaches to delineate subgroups in the community and to understand reactions which various populations (particularly the least educated, least urbanized, and poorest individuals and groups) have to alternative program packages.

Development of such a social planning approach to planning social services begins with examination of the styles of life of specialized sectors of the population. The outcome is a set of incremental programs which fit means to ends and test their fit continually in terms of impact on persons.

#### PROGRAM BUDGETING AND BENEFIT-COST ANALYSIS

Professor Courtney Riordan and guest lecturers.

An introductory course intended to provide theoretical understanding and practical knowledge of new organizational and analytical approaches to normative public decision making. Course material will consist of a combination of theory, case studies, and consideration of current issues and thoughts regarding the practicality and effectiveness of implementation. Emphasis will be upon the use of these new approaches to improve planning and public expenditure analysis at the level of state and local government. No prior training in budgeting or public finance is necessary.

#### COLLEGE AND UNIVERSITY PLANNING AND INSTITUTIONAL RESEARCH

Professors Kermit C. Parsons, Thomas W. Mackesey, Thomas R. Mason, and guest lecturers.

Designed to provide an intensive week of study in college and university campus planning that will permit an interchange of approaches between the participants as well as instruction in the methods and techniques of research, analysis, plan preparation, and implementation.

Topics include: statewide planning for higher education, community planning and campus planning, urban renewal and campus development, organization for university planning, institutional research, utilization studies, scheduling and simulation, plan development/facilities programming, the capital budget, and case studies.

## CITY AND REGIONAL PLANNING

### Internship Program in Planning and Public Administration

June 28–August 20

A summer internship in the New York metropolitan area in public planning, development, and renewal agencies, in planning consultants' offices, in private organizations, or with citizen groups, combined with lectures and discussions two evenings a week and field trips in the New York area and to other east coast cities. Tuition is \$240 for three hours of credit. Several Richard King Mellon Charitable Trusts Scholarships are available.

Offered primarily for Master of Regional Planning degree candidates in the Department of City and Regional Planning but open to students in other departments at Cornell and to students in planning programs at other universities. Admission by permission of the department. For further information address Professor Stuart W. Stein, Department of City and Regional Planning, Sibley Hall, Cornell University, Ithaca, New York 14850.

#### Plan. 542. INTERNSHIP PROGRAM IN PLANNING AND PUBLIC ADMINISTRATION (G)

Three hours credit. *June 28 to August 20.* Admission by permission of department only. Mr. Stein, Mr. Parsons, and visiting lecturers.



## CORNELL ALUMNI UNIVERSITY

July 11-August 7

The Cornell Alumni University, a special summer program designed for alumni, their families, and their friends, provides an opportunity for continuing education based on a broad approach to man and his values in today's society. The program, consisting of four one-week units, offers two series of lectures on each week's topic. Each lecture series will feature four professors who will present different viewpoints on the topic "Change and the Human Condition." Seminars will be held following the lectures to afford all participants an opportunity to share and exchange their viewpoints.

This educational program, together with the natural beauty of the Cornell campus and the recreational opportunities for which the Finger Lakes Region is known, offers both a stimulating and pleasantly relaxing vacation.

Families are encouraged to attend and provisions have been made for children of all ages. The teenagers can participate in a modified academic and recreational program which is designed to stimulate their interest in higher education and acquaint them with the opportunities afforded at Cornell University. A day camp will be available for youngsters from five through twelve years of age, a nursery school for the three- to five-year olds, and, at an additional charge, individual babysitting will be available for children under three years of age.

Tuition charge per week per person, including room and board, is \$130 for adults and \$80 for youngsters. Any additional fees will be indicated on the application for admission.

The program expects to accommodate approximately 160 adults per week. For alumni, all applications will be accepted on a first-come, first-served basis. Individuals who are not Cornell graduates are welcome to join the program provided space is available.

For further information and application forms, write to Mr. G. Michael McHugh, Director, Cornell Alumni University, 431 Day Hall, Ithaca, New York 14850.

### Program: Change and the Human Condition

#### CHANGING INSTITUTIONS AND RESPONSIBILITY

First and third weeks: *July 11-17 and July 25-31*

#### Cornell Faculty Presenting Lecture Series:

Walter F. LaFeber, Ph.D., Marie Underhill Noll Professor of American History.

Mrs. Eleanor D. Macklin, M.A., Lecturer and Extension Associate, Human Development and Family Studies

Daniel G. Sisler, Ph.D., Associate Professor of Agricultural Economics

Robert S. Summers, LL.B., Professor of Law

#### MODERN RESPONSES TO CHANGE

Second and fourth weeks: *July 18-24 and August 1-7*

### Cornell Faculty Presenting Lecture Series:

Calum M. Carmichael, B.D., B.Litt., Associate Professor of Biblical and Semitic Studies

David I. Grossvogel, Ph.D., Goldwin Smith Professor of Comparative Literature and Romance Studies and Chairman, Department of Romance Studies

Dominick LaCapra, Ph.D., Assistant Professor of Modern European History

Albert Silverman, Ph.D., Professor of Physics, Nuclear Studies

## INSTITUTE IN EARTH AND SPACE SCIENCE

Supported by the National Science Foundation

July 6-31

Four-week conference for secondary school teachers on:

### SPACE PLATFORMS, SPACE PROBES, AND THE APPLICATION OF ENVIRONMENTAL OBSERVATIONS OBTAINED FROM THESE SYSTEMS

Conference material will cover the characteristics and capabilities of space platforms, probes and sensor systems, and the application of the data received to the study of the earth's surface and atmosphere. It will also cover recent advances in ground based and space probe studies of the solar system.

Laboratory and discussion sessions will involve the use of satellite data (received in real time) to instruct the participants in procedures of gridding and application of imagery from space. Participants will also learn celestial mechanics as it applies to orbital motions of planets and satellites.

This conference will update subject matter knowledge of the earth sciences, allow the earning of graduate credit, and better equip the teacher to help his students understand the growing environmental problems of today's world.

The program is designed for earth science teachers who have had at least one recent institute experience. It is being offered for five hours of graduate credit.

For application forms and further information, write to Dr. Bernard Dethier, Director, Division of Meteorology, Box 21, Emerson Hall, Cornell University, Ithaca, New York 14850.

Met. 490u. SPACE PLATFORMS, SPACE PROBES, AND THEIR USES (G)  
Five hours credit. July 6 to July 31. Time and meeting place to be arranged.  
Mr. Dethier.

## Engineering Cooperative Program Summer Term

June 7-September 4

ADMISSION. Selected courses of the regular curricula in the College of Engineering are offered in the summer to accommodate the schedule of

Cornell students in the Cooperative Program. Within the enrollment capacity of each course, other students may be admitted provided they present satisfactory evidence of being prepared and a letter of authorization from the college or university in which they are enrolled. A schedule of courses to be offered will be available after April 15, 1971.

**CALENDAR.** Courses are scheduled in two separate but consecutive seven-week periods: first period, June 7–July 21; second period, July 22–September 4.

**TUITION AND FEES.** Because the Cooperative Program Summer Term is essentially a curriculum term in the College of Engineering, tuition and fees are not those of the six-week Summer Session but are based upon the regular tuition and fees for a semester in the academic year.

**REGULATIONS AND SERVICES.** In general, the regulations described for the Summer Session apply also to the Engineering Cooperative Program Summer Term. Health services and library facilities are available during the Engineering Cooperative Program Summer Term.

**DOUBLE REGISTRATION.** Insofar as they can be scheduled, courses of the regular Summer Session may be arranged for students admitted to the Engineering Cooperative Program Summer Term.

For applications, address Director of the Engineering Cooperative Program, Upson Hall, Cornell University, Ithaca, New York 14850.

## ENGINEERING SHORT COURSES

### Coordinated by the Office of Continuing Education, College of Engineering

The Engineering Short Courses are noncredit courses intended for practicing engineers and scientists who wish to extend or update their knowledge of various technical subjects. The courses include lectures, computation sessions, and laboratory periods.

For information and application forms, write to the Director of Continuing Education, 251 Carpenter Hall, Cornell University, Ithaca, New York 14850.

### Computer Science

#### AUTOMATIC INDEXING AND LIBRARY INFORMATION PROCESSING

Professor G. Salton. Fee: \$250. One week: *June 21–25.*

#### COMPILER CONSTRUCTION

Professor D. Gries. Fee: \$250. One week: *June 21–25.*

#### PICTURE PROCESSING: COMPUTER GRAPHICS AND PATTERN RECOGNITION

Professors S. K. Chang, A. C. Shaw. Fee: \$250. One week: *June 28–July 2.*

## Mechanical Design

### DESIGNING RELIABILITY INTO MECHANICAL COMPONENTS

Professor A. H. Burr. Fee: \$250. One week: *June 28-July 2.*

## Microscopy

### ELECTRON AND LIGHT MICROSCOPY

Professor G. Cocks; Mr. S. Breese. Fee: \$500. Two weeks: *June 14-25.*

## Structural Engineering

### COLD FORMED STEEL DESIGN

Professor W. McGuire. Fee: \$250. One week: *June 28-July 2.*

### FINITE ELEMENT ANALYSIS: FUNDAMENTALS

Professors R. H. Gallagher, J. J. Connor. Fee: \$250. One week: *June 21-25.*

### OPTIMUM STRUCTURAL DESIGN

Professors R. H. Gallagher, S. Fenves, F. Moses. Fee: \$250. One week: *June 28-July 2.*

### STRUCTURAL DESIGN FOR EARTHQUAKES AND OTHER DYNAMIC LOADS

Professor P. Gergely. Fee \$250. One week: *June 28-July 2.*

## Thermal Engineering

### HEAT PIPES: PRINCIPLES AND APPLICATIONS

Professor B. Gebhart. Fee: \$250. One week: *June 28-July 2.*

## Environmental Engineering

### ENVIRONMENTAL EFFECTS OF NUCLEAR POWER PRODUCTION

Professors K. D. Cady, C. Comar, J. C. Thompson, and guests. Fee: \$275. One week: *June 21-25.*

### ENGINEERING CONTROL OF INDUSTRIAL WASTE WATER

Professor C. D. Gates and guest lecturers. Fee: \$250. One week: *June 21-25.*

### DESIGN OF SMALL RESERVOIRS

Professor R. D. Black. Fee: \$250. One week: *June 21-25.*

## Engineering Management

### MODERN ENGINEERING CONCEPTS FOR TECHNICAL MANAGERS

Staff of forty lecturers. Fee: \$975 (including housing and meals). Two weeks: *June 21-July 2*.

### MANAGING TECHNICAL PERSONNEL

Professors T. M. Lodahl, C. Alderfer. Fee: \$250. One week: *June 21-25*.

## Electrical Engineering

### FUNDAMENTALS OF MICROWAVE SEMICONDUCTOR DEVICES

Professors G. C. Dalman, C. A. Lee, L. F. Eastman, J. Frey. Fee: \$200. Three days: *August 13-16*.

## INTRODUCTORY PROGRAM IN FIELD ECOLOGY

**July 26-August 27**

The program in field ecology will feature a unique, integrated study of terrestrial and aquatic ecology of the eastern United States. All factors of the environment, from soils and geology to plants and animals including man, will be incorporated. Emphasis will be placed on field studies supervised by teams of staff members. The students will conduct individual projects. There will also be seminars and special lectures given by authorities.

The study of man and his natural surroundings, with an approach to a quality environment, will be the overriding theme. An attempt will be made to instill in each participant a strong conservation ethic and an appreciation for natural resources.

The field work will be done at two properties owned by Cornell University: Arnot Forest and Shackelton's Point. The course is open to all interested students, graduate or undergraduate, who have had at least one year of college biology. Students must also have had experience in the use of the taxonomic keys.

The cost per person is \$650, payable to Cornell University at registration. This amount covers tuition, fees, room and board, insurance, and transportation during the five-week period. Limited financial help in the form of scholarships and assistantships is available. Seven hours credit will be received by each participant for satisfactory work.

Enrollment will be limited to thirty students. Applications must be received by April 1, 1971. Requests for application forms should be sent to Summer Program in Field Ecology, B-20 Ives Hall, Cornell University, Ithaca, New York 14850.

### Consv. 310u. BASIC FIELD ECOLOGY (U,G)

Seven hours credit. *July 26 to August 27*. Registration limited to 30 students. Prerequisites, at least one year of college biology, and experience in the use of taxonomic keys. Lectures, seminars, and field studies. Messrs. Oglesby, Winch, and Kelley are in charge, supplemented by other faculty.

## UNIT COURSES IN GUIDANCE

Offered by the Department of Education

July 5-23

The three courses described below are made available to counselors on a three-week basis in order to provide an opportunity for professional improvement without the need for extended leaves of absence from employment. Credit earned is at the graduate level and may be applied toward meeting requirements for permanent certification for school guidance positions. For further information, address Dr. A. Gordon Nelson, 215 Stone Hall, Cornell University, Ithaca, New York 14850.

### Ed. 586u. ORGANIZATION AND ADMINISTRATION OF GUIDANCE PROGRAMS (G)

Two hours credit. Prerequisite, provisional certification in guidance. M T W Th F 8-9:40. East Roberts 223. Mr. Bresee.

Principles and practices in planning and conducting a guidance program and other pupil personnel services. This is one of the courses required for permanent certification in guidance in New York State.

### Ed. 587u. PRACTICUM IN MEASUREMENT AND APPRAISAL FOR COUNSELORS (G)

Two hours credit. Prerequisite, a course in psychological testing. M T W Th F 10-11:40. East Roberts 223. Mr. Andrus.

An advanced course in the use of tests and test results in the psychological appraisal of individuals. Emphasis will be placed on analysis of testing programs, intensive examination of selected standardized tests, and laboratory experience in interpreting test results. Designed to meet a New York State permanent certification requirement for guidance counselors.

### Ed. 589u. AFFECTIVE EDUCATION (G)

Two hours credit. *Note:* Due to the structure of this course, enrollment will be limited to 36 students. Applications should be submitted as early as possible, and no later than May 1, 1971. M T W Th F 12-3:30. East Roberts 223. Mr. Hedlund.

Affective education is the developing curriculum area designed to teach the student skills for understanding and guiding his own personal development. This course will utilize an experience-based, participatory design to develop basic interpersonal and small group skills, and to introduce a conceptual framework for the design, application, and evaluation of humanistic education techniques and courses. The course is appropriate for counselors, teachers, and administrators concerned with the development of psychological education offerings in the school. Designed to meet a New York State permanent certification requirement for counselors.

## CORNELL SUMMER PROGRAM IN HEIDELBERG

Depart June 10—Return August 23

Cornell's Summer Program in Heidelberg, Germany, affords students the opportunity of receiving instruction in German language and literature and studying the contemporary culture in one of the most interesting of German cities. Classes will meet five days a week for seven weeks. All students must have qualification in German (CEEB score of 560 or better) or equivalent competency at the beginning of the program. Participants will be divided into several groups, according to their level of preparation. Students will attend lectures and participate in activities at the University of Heidelberg, and the program will use the facilities of the *Germanistisches Seminar* of the University, including the seminar library.

Besides the regularly scheduled classes, there will be group activities, including a visit to a winery, trips to local historical landmarks, and trips to other German cities. To facilitate maximum exposure to the German-speaking environment, students will live with individual German families.

The courses taken will be equivalent to those offered during the regular academic year. Six hours of college credit will be granted for satisfactory completion of the program. Faculty in charge are Messrs. Bansberg, Deinert, and Wetzel.

The cost of the program is approximately \$900, which includes round-trip transportation from New York, room and board for seven weeks, tuition, educational material, and cultural and social activities sponsored by the program including trips. Not included are costs for extra travel and personal expenses.

The deadline for the 1971 program has already passed. Those interested in a similar program for 1972 may receive further information by writing to the Chairman, Department of German Literature, Cornell University, 172 Goldwin Smith Hall, Ithaca, New York 14850.

## HOTEL ADMINISTRATION

June 21—August 6

In 1922 Cornell University established, with the cooperation and financial assistance of the American Hotel Association, a four-year course in hotel administration for secondary school graduates desiring to enter the administrative departments of the hotel business. Many hotel proprietors and managers who have been unable to take a four-year university course have asked for shorter courses with less formal entrance requirements.

To meet this demand, unit courses in hotel administration, one to three weeks in length, are offered in the Summer Session. A circular giving full details of these courses has been issued and will be sent upon request. For this circular, for other information about the work in the School, and for admission to these courses, address the Administrative Aide, Summer School of Hotel Administration, Statler Hall, Cornell University, Ithaca, New York 14850.

## HUMAN ECOLOGY UNIT COURSES

July 1–August 13

Unit courses are offered by three departments of the College of Human Ecology (formerly Home Economics). These courses are planned for teachers and other professionals in the field of education.

Two of the unit courses are three weeks in length and one is for two weeks. They may be combined with unit courses offered by other departments or with independent study to provide a longer summer program. However, each unit course involves full-time participation for the designated period, and one course includes one week spent in New York City.

Early applications are requested. Registration will be completed at the first meeting of the class for each course. Further information and application forms can be obtained by writing to the person listed at the end of each course description.

## Community Service Education

## \*CSE 585u. WORKSHOP: DEVELOPMENT OF LEARNING PACKAGES (G)

Three hours credit. *July 1 to July 23. M T W Th F 9–3. MVR N-225. Mrs. Nelson and Mrs. Hughes.*

This workshop is designed for current or prospective classroom teachers of home economics (occupational or homemaking).

The practice of individualizing instruction is increasingly popular in public education. One of the most possible methods for teachers to use without heavy expense or the cooperation of other agencies is the “packaged” learning module in which learning resources and evaluation are planned around a small core of objectives. The proposed workshop is designed to help home economics teachers at all levels develop their own flexible learning packages. Each class member will be able to develop at least one learning package of her choice. A combination of lectures and ample opportunity for individualized work will be provided. Students will be expected to cover costs of materials used for class projects, approximately \$10 to \$15. Full or partial scholarships may be available. Registration date is July 1. Time and place will be announced. Applications must be submitted not later than June 1.

For further information and application blanks write Mrs. Helen Nelson, New York State College of Human Ecology, Cornell University, Ithaca, New York 14850.

## Consumer Economics and Public Policy

## CE&amp;PP 535u. CONSUMER IN THE MARKET (G)

Three hours credit. *July 26 to August 13. Limited to 15 students. M T W Th F 9–12 and 1–4. MVR 124. Miss Byers.*

A workshop designed for teachers of consumer problems who wish to gain an understanding of the consumer goods market. Product information, quality control, advertising credit, and legal and regulatory arrangements in several consumer goods industries will be examined during an intensive two-week seminar on campus. This will be followed by a one-week field trip to New York City, where participants will have an opportunity to visit various ele-



ments of the market and discuss consumer problems with representatives from industry.

This workshop is being developed in cooperation with several land grant institutions and the consumer education division of a large national retail organization. The cost of tuition will be \$210 plus \$5 per week for two weeks.

Registration will be held on July 26 at 9 A.M. in Room 124 Martha Van Rensselaer Hall. For further information and application forms write Miss Gwen Bymers, New York State College of Human Ecology, Cornell University, Ithaca, New York 14850.

## Human Development and Family Studies

### HDFS 336u. METHODS AND MATERIALS WORKSHOP FOR TEACHERS AND AIDES IN PRESCHOOL PROGRAMS (U.G.)

Three hours credit. *July 1 to July 15.* Limited to 30 students. M T W Th F 9-4. MVR 172. Mrs. McCord.

This is to be a workshop course for paraprofessionals and teachers which will expose and involve the student in a variety of methods and creative use of materials. It will cover such topics as setting up the learning environment, food in the classroom, science and nature study, music, props for language development, manipulative activities, numbers, and art. These topics will be explored through workshops, films, field trips, demonstrations, and discussion groups. Tuition cost will be \$60 plus \$5 per week general fee.

Registration will be on July 1 at 9 A.M. in MVR 172. For further information and application forms write Mrs. Gretchen McCord, New York State College of Human Ecology, Cornell University, Ithaca, New York 14850.

## INSTITUTE FOR ADMINISTRATORS OF NURSING HOMES AND HEALTH RELATED FACILITIES

### Program Dates to be Announced

*Purpose.* This program is designed to improve patient care by helping participants meet requirements for licensure as providers of care, coordinate their efforts with those of total health care systems, and explore community health resources.

*Program.* Lectures and discussions will be offered on such topics as providing high quality patient care, meeting special needs of elderly patients, studying the changing picture in long-term care, working with other health institutions and agencies, and developing personnel programs. Directed field study will be conducted in related institutions and agencies. Interaction with consultants and participants on individual problems will be pursued.

*Who May Apply?* Administrators of nursing homes and health related facilities. Prerequisite, high school graduate or equivalent. This is a noncredit course, but certificates of merit will be issued to all participants who satisfactorily complete the required work by the end of the program.

*Cost:* Tuition will be approximately \$400.



*Class studying Quechua, language of Andean Indians*

Registration will take place at the first class meeting. Time and place to be announced. Mrs. Kathryn O. Visnyei is the director. For further information and application forms, write Institute for Administrators of Nursing Homes and Health Related Facilities, 257 Martha Van Rensselaer Hall, Cornell University, Ithaca, New York 14850.

## LATIN AMERICAN LANGUAGE AND AREA PROGRAM

June 21–August 13

The Latin American Language and Area Center, in cooperation with the Northeast Consortium for Andean Studies, offers a program of intensive instruction in Latin American studies with special emphasis on the Andes.

The deadline for applications for admission is May 15, 1971. Applications for admission may be obtained from the Director, Latin American Studies Program, 205 Rand Hall, Cornell University, Ithaca, New York 14850.

### Latin American Area Studies

Agr. Econ. 666. SEMINAR ON LATIN AMERICAN AGRARIAN REFORM (U,G)

Four hours credit. *July 1 to August 13*. Prerequisites, reading knowledge of Spanish. M T W Th F 9:30–10:45. Goldwin Smith 160. Mr. Barraclough.

The seminar will review the literature on the relationship between land tenure structure and economic development in the Andean region and analyze the agrarian reform and development policies that have been adopted or proposed. An attempt will be made to evaluate the effectiveness of agrarian reform and development programs in meeting economic, social, and political goals.

Anthro. 507. ANDEAN CIVILIZATION: SPECIAL PROBLEMS IN ANTHROPOLOGY (U,G)

Four hours credit. *July 1 to August 13.* M T W Th F 11-12:15. Goldwin Smith 160. Mr. Lynch.

The course will center on the origins, development, and diffusion of native Andean Civilization. The material will be arranged so that students from associated disciplines will be able to study and learn about the historical development of Andean Civilization.

Gov. 540. SEMINAR IN LATIN AMERICAN POLITICS (U,G)

Four hours credit. *July 1 to August 13.* M T W Th F 12:30-1:45. Goldwin Smith 160.

The seminar will focus its attention on the mechanisms of political power in the Andean countries. Consideration will be given to the concepts of external domination, peripheral status, dependency, traditional society and modernized, and the political and social institutions which constitute the parameters of political power in the Andean region.

## Quechua Language

Que. 101. ELEMENTARY QUECHUA (U,G)

Eight hours credit. *June 21 to August 13.* M T W Th F 8-10 and 11-1. Lincoln 204. Twenty hours of instruction per week for eight weeks. Mr. Solá and staff.

An intensive introductory course in the Cuzco dialect of Quechua, emphasizing auditory and speaking skills.

Que. 133. INTERMEDIATE QUECHUA (U,G)

Three hours credit. Prerequisites, qualification in Spanish and Quechua 101 or equivalents. *July 1 to August 13.* M T W Th F 2-3:15. Lincoln 204. Mr. Solá and staff.

An intermediate course in the Cuzco dialect of Quechua, emphasizing basic auditory comprehension and verbal control. The course offers the opportunity for students to read Quechua documents, particularly the "Huarociriri" text.

The following courses included in the regular Summer Session may be of interest:

Span. 101. SPANISH BASIC COURSE. See p. 63.

Span. 131u. SPANISH ELEMENTARY READING COURSE. See p. 63.

Span. 132u. SPANISH ELEMENTARY READING COURSE. See p. 64.

Span. 203. INTERMEDIATE READING AND CONVERSATION COURSE. See p. 64.

## SUMMER PROGRAM IN MARINE SCIENCE

### June 5-July 2

This program is offered jointly by Cornell University, the University of New Hampshire, and the State University of New York. It is designed as a general introduction to marine science, and includes topics such as biology of shore

## 90 GRADUATE WORK IN PHYSICS

and marine organisms including algae, sea grasses, plankton, invertebrates, teleosts, elasmobranchs, birds, and marine mammals; the tools, techniques, and perspectives of oceanography; marine microbiology and toxins; geological oceanography and coastal geology; mud flat, salt marsh, and marine ecology; bird (especially sea gull) behavior; photography in marine environment; and the techniques and problems of commercial fisheries in the New England area. Faculty will consist of some thirty marine scientists drawn principally from the participating universities, but including also specialists and guest lecturers from other universities, the commercial fishing fleet, and industry.

The first portion of this program will be presented at the Isles of Shoals, ten miles offshore at Portsmouth, New Hampshire, and the second will be presented through facilities of the University of New Hampshire including the campus at Durham and the Jackson Estuarine Laboratory on Great Bay.

Enrollment in this Program is limited. Expenses will total \$540. This covers tuition, fees, board, room, health insurance, and special transportation during the four-week period. A limited number of scholarships are available. Four credits will be awarded by Cornell University or by the University of New Hampshire for successful completion of the course. All application procedures are handled by Cornell University.

For further information and application forms, address the Director, Summer Program in Marine Science, B-20 Ives Hall, Cornell University, Ithaca, New York 14850.

### Biol. Sci. 364u. INTRODUCTION TO MARINE SCIENCE (U,G)

Four hours credit. *June 5 to July 2*. Prerequisite, at least a full year of college biology. Daily lectures, laboratory, and field work. No formal examinations; grades are S or U (satisfactory or unsatisfactory).

## GRADUATE WORK IN PHYSICS

### June 16–August 13

Laboratory work is being offered to graduate students by the Department of Physics on an eight-week basis. Tuition and fees will be charged at the same rate as for the regular Summer Session (\$70 per credit hour for tuition, and \$5 per week general fee).

Registration will be held on June 16 at the Summer Session office, B-20 Ives Hall, at a time of day which does not interfere with attendance in class. The Summer Session office is open from 8 A.M. to 5 P.M. For further information and application forms write Director, Graduate Work in Physics, B-20 Ives Hall, Cornell University, Ithaca, New York 14850.

### \*Physics 500. INFORMAL GRADUATE LABORATORY (G)

One or two hours credit. *June 16 to August 13*. Prerequisites, Physics 236, 310 or 360, and a junior-senior course in contemporary physics (e.g., Physics 436), or consent of the instructor. Laboratory open M T W Th F 2–5. Clark 304. Mr. Browman and staff.

This laboratory is associated with the Physics 510 laboratory; see topics listed under Physics 510, p. 92. Physics 500 can also be taken in the six-week session, see p. 67. Fee, \$5 per credit hour.



*Marine Science Program—Isles of Shoals, New Hampshire*

**\*Physics 510. ADVANCED EXPERIMENTAL PHYSICS (G)**

Three hours credit. *June 16 to August 13.* Prerequisites, Physics 410, or 500, and 443, or consent of the instructor. M T W Th F 2-5. Clark 308. Mr. Browman and staff.

About seventy different experiments are available among the subjects of mechanics, acoustics, optics, spectroscopy, electrical circuits, electronics and ionics, heat, x-rays, crystal structure, solid state, cosmic rays, and nuclear physics. The student is expected to perform about five or six experiments, selected to meet his individual needs. Stress is laid on independent work. Fee, \$15.

## COLLEGE-PREPARATORY READING AND STUDY SKILLS PROGRAM

### July 5–August 6

*Purpose.* This program is designed to teach students the reading and study skills necessary for successful scholarship at the college level.

*Who May Apply?* College-bound students who will have completed their junior or senior year of secondary school by June 1971. Registration will be limited; therefore, early applications are encouraged.

*Time Involved.* Students will meet daily, both mornings and afternoons, beginning Monday, July 5, and ending Friday, August 6. Additional work outside of class time is required each day.

#### *The Program*

1. *Reading.* Flexibility in reading will be emphasized. Topics covered will include reading techniques for maximum comprehension, skimming and scanning, speed reading, the critical approach in reading essays, and many more techniques for special situations.

2. *Writing.* Emphasis will be given to the writing of research and term papers. From the selection of a topic to the final typing of the last revision, there is a series of skills which, if learned thoroughly, will be an important contributing factor to an individual's later success in college.

3. *Study Skills.* Developing a sense of order, setting realistic goals and working out an effective time schedule, and learning the art of taking notes both in the classroom and from technical and library readings are just a few of the important topics which will be covered.

4. *How to Take Tests and Examinations.* Due to insufficient preparation and a lack of test-taking skills, many students find that their answers do not fully reflect their knowledge and true learning ability. Training will be given in the development of the skill called "test-wiseness"—the ability to cope with test-taking situations and to use the characteristics of tests to reach the full potential of one's knowledge and aptitudes.

5. *Listening Skills.* Improving the ability to register and retain spoken information. "Effective Listening," a basic systems program developed by the Xerox Corporation, will be used.

6. *General Aspects of Communication.* Understanding the basic principles of organization; vocabulary building; critical reading of factual material; development of oral facility.

*Laboratory Work.* Students will work daily in the reading laboratory to practice good reading techniques on reading machines which have proven to be instrumental in increasing both the rate of reading and the level of comprehension. Students will be permitted to use laboratory equipment beyond the time required in their regularly scheduled periods.

*Cost.* The total charge to out-of-area students is \$475. This covers room, board, tuition, text books, and all fees including those for health services and student union privileges.

Cost to commuting students is \$250, including tuition, textbooks and fees.

A preregistration deposit of \$50 is required following notification of acceptance. There are no scholarships offered in the program.

*Living Facilities.* Students will live in a University dormitory facility reserved exclusively for the younger students. There will be one counselor to every ten to twelve students. Rules and regulations regarding residence halls, curfew, etc., are similar to those normally applying to college freshmen. Students are not allowed to have cars. Weekend commuting is discouraged, and no refunds are provided for meals not taken in the dormitory.

*How to Apply.* For application forms and additional information address Mr. Walter Pauk, Director, Reading and Study Center, 375 Olin Hall, Cornell University, Ithaca, New York 14850. Applications are due by June 1, 1971.

## SHELL MERIT FELLOWSHIP PROGRAM

### Mid-June to End of July

This program is designed for selected secondary school teachers and supervisors of science and mathematics. Participants will design audio-tutorial instructional units for individualized study of science and mathematics.

The deadline for completed applications for the 1971 program was January 5, 1971. Those interested in the 1972 program may receive further information by addressing inquiries to Shell Merit Programs, 19 Stone Hall, Cornell University, Ithaca, New York 14850.

## SUMMER STUDIOS IN ART

See Summer Arts Festival, p. 101.



*The Cornell Chamber Chorale*





*Summer  
Arts  
Festival*

Creative Writing  
Music  
Studios in Art  
Theatre Arts

The Cornell Summer Session is proud to present, for the second time, the Summer Arts Festival.

The aims of the Festival are twofold: (1) to make the arts available to those who wish to participate and advance their knowledge in a particular area and (2) to provide the richest possible environment for students of the arts, the members of the community, and visitors to this area.

Four workshops in creative writing are offered by the Department of English to aspiring as well as talented authors of novels, short stories, other types of prose and poetry, and playwriting. The Department of Music is offering an expanded Summer Session Concert Series and, in addition, will conduct workshops in performance and composition.

Studios in Art, already a favorite summer offering of the Department of Fine Arts, features prominent contemporary artists from the staff of Cornell and other institutions. "Exploring the Visual Arts," a program for high school juniors, is being offered for the first time as a component of the Studios in Art program.

The Department of Theatre Arts will provide the Cornell community with a summer season of contemporary and classic drama presented by the Summer Repertory Theatre under the direction of the University Theatre staff. In addition, a workshop on dance and movement will again be held. The Film Production Workshop, which has received much acclaim for its production of *Branches* last summer, will again produce a film on campus. In addition to workshops and courses of study, there will be scheduled throughout the Summer Session public performances in theatre, music, and dance; art exhibitions, lectures, poetry readings, and film exhibitions; all focused on making available a full experience of the arts.

## Creative Writing Workshops

*OFFERED BY THE DEPARTMENT  
OF ENGLISH*

June 30–August 13

As part of the Summer Arts Festival, an expanded program of workshops in creative writing is being offered by eminently qualified teachers. The program is designed for students seriously interested in writing as a career and comprises four different workshops for the development of talent and skills in writing. One work-

shop is of an exploratory nature and covers poetry, fiction, and other allied forms; the second is a workshop for writers of narrative, short stories, novels, and other similar literary forms; the third is an advanced poetry workshop; and the fourth a workshop on playwriting.

Individuals interested in applying should use the application at the back of this *Announcement* and refer to the courses listed below. The Summer Session tuition of \$70 per credit hour and \$5 per week general fee will apply. (See Tuition and Fees, pp. 14-15.)

Engl. 303. CREATIVE WRITING WORKSHOP:  
EXPLORATIONS (U,G)

Four hours credit. Limited to 20 students. M T W Th F 1:30-2:45. Goldwin Smith 246. Mr. States.

A workshop for the development of talent and skills in the art forms of writing. Explorations for the bases of literary aesthetics. Practice in writing poetry, prose fiction, and allied kinds of writing. Participants will submit their own work for analysis in group discussion and in conference.

Engl. 385. ADVANCED FICTION WORKSHOP (U,G)

Four hours credit. Limited to 20 students. M T W Th F 11-12:15. Goldwin Smith 236. Mr. McConkey.

A workshop for writers of narrative, of short stories, novels, and allied forms, who are in need of development beyond the exploratory stages of creative writing. Participants will submit their own work for analysis in group discussion and in conference.

Engl. 387. ADVANCED POETRY WORKSHOP (U,G)

Four hours credit. Limited to 20 students. M T W Th F 3-4:15. Goldwin Smith 236. Mr. Parker.

A workshop for poets in need of development beyond the exploratory stages of creative writing. Participants will submit their own work for analysis in group discussion and in conference.

Engl. 389. PLAYWRITING (U,G)

Four hours credit. Limited to 20 students. M T W Th F 9:30-10:45. Goldwin Smith 236. Mr. Caputi.

A workshop to consist of analyses of selected model plays, exercises in playmaking, and the reading and criticism of student work. Students need not have had any experience in playwriting, but they should have some familiarity with dramatic literature.

## Music Program

The contribution of the Department of Music to the Summer Arts Festival is unusual in its presentation. A series of evening concerts, readings, workshops, and summer courses makes up the agenda.

Compositions written by participants of the Composers Workshop will be read by members of the string quartet, the choral group, and keyboard performers. Readings will be held the day following the related concert and will be open to the public without charge. The choral music group, in addition to reading new choral compositions by student members of the Composers Workshop, will present one evening concert and will join with the Summer Session Choir on two Sundays for the Sage Chapel services. Students taking "A Survey of Vocal Music" not only will hear lectures and participate in class projects but also will observe live music demonstrations by attending concert rehearsals and reading sessions.

### *SUMMER SESSION CONCERT SERIES*

In the past, the Summer Session Concert Series has provided the Cornell community with a variety of programs of chamber music and recitals. The 1971 Concert Series, as part of the Summer Arts Festival, is presenting an expanded program of evening concerts by distinguished artists. Six evening concerts will be held on successive Thursdays (July 1, 8, 15, 22, 29, and August 5) in the newly redecorated Barnes Hall Auditorium. In addition, an organ recital will be held on Sunday, July 25. The names of the performing artists for the Concert Series will be announced on registration day.

### *CHORAL MUSIC PROGRAM*

July 11-24

A novel program in choral music provides gifted students and residents the opportunity to join with an ensemble of young professional singers in an intensive two-week institute of rehearsals, reading sessions, demonstrations, and performances. Participants will rehearse each morning, afternoon, and evening. The repertoire, selected from the gamut of choral literature, will emphasize Renaissance, baroque, and contemporary music. The ensemble will provide live examples of vocal and choral music for the course "A Survey of Vocal Mu-

sic"; will read new choral compositions; and will join the Summer Session Choir at two Sage Chapel services. In addition, the ensemble will present a concert as part of the summer series. Several informal recitals will be held featuring the professional singers as soloists or in small groups.

Admission to the Choral Music Program is by audition only. Inquiries and requests for application forms should be addressed to Professor Thomas A. Sokol, Department of Music, Cornell University, Ithaca, New York 14850.

For information on the course "A Survey of Vocal Music", see Music 103, p. 69 of the *Announcement*.

Participants of the Choral Music Program interested in earning college-level credit for their time spent in the program may register in the following course.

#### Music 464u. CHORAL STYLE (U,G)

Two hours credit. *July 11 to July 24*. Registration only by consent of the instructor. M T W Th F 4-5:30; 7:30-9 P.M. Barnes Hall Auditorium. Mr. Sokol.

### COMPOSERS WORKSHOP

July 12-30

A seminar and workshop for composers will be offered to intermediate and advanced students with particular emphasis given to writing chamber works. These compositions will be read in three sessions by visiting ensembles and resident performers, including a string quartet, vocal ensembles, and keyboard performers. Class discussions will include new techniques and possibilities in composing. Students will be required to analyze and discuss the scores of specific works. The program will conclude with an informal concert of compositions written by the participants.

Students accepted into the workshop will register in the course listed below. For further information and application forms write to Professor Robert Palmer, Composers Workshop, B-20 Ives Hall, Cornell University, Ithaca, New York 14850.

#### Music 457u. COMPOSITION (U,G)

Three hours credit. *July 12 to July 30*. Registration only by consent of the instructor. M W F 9-12. Lincoln 121. Mr. Palmer.



*Friedel Dzugas, art critic, assists student in Studios in Art course*

## Studios in Art *PAINTING AND DRAWING, SCULPTURE, GRAPHIC ARTS, PHOTOGRAPHY, MULTI-MEDIA ART*

July 5–August 13

During the summer months, the Department of Fine Arts of Cornell University presents a program of courses of interest to both beginning students and persons already committed to the study of art. Classes are kept small in number to enable the instructor to give individual attention to each student. Participants will be able to work at their own pace and will include the novice who wishes to pursue his study of art on a non-professional basis as well as the experienced artist who is interested in advancing his studies on a more concentrated level.

The staff will consist of prominent members of the Cornell faculty and visiting artists. Painting will be taught by Jack Bosson, Friedel Dzubas, Kenneth Evett, and Jeffrey Poklen. Jack Squier will teach sculpture. Instruction in silk-screen printing will be given by Steve Poleskie and Arnold Singer will give a course in drawing. Photography will be taught by Thomas Burton, and Joseph Scala will teach a multi-media course. Norman Daly will teach materials and techniques.

Courses in the above arts are available in each of three two-week periods; July 5–16, July 19–30, and August 2–13. Instruction is open to students at all levels of experience and will afford ample opportunity for personal communication with their instructors and fellow students.

For additional information and an application form write to the Director, Summer Studios in Art, B-20 Ives Hall, Cornell University, Ithaca, New York 14850.

### *EXPLORING THE VISUAL ARTS A PROGRAM FOR HIGH SCHOOL JUNIORS*

July 5–August 6

As a component of the Summer Studios in Art, this program is designed specifically for high school students who will have completed their junior year in June, 1971. Studio courses in drawing, painting, and graphics will provide instruction to the students in materials

and techniques and will lead to individual studio work with emphasis on experimentation and creativity.

Theory and Methods of Art, a noncredit survey course, will analyze the major phases of art history and the roles of the artists involved. Students will be encouraged to use the results of this survey as a basis for their own work. Field trips to art exhibitions, outdoor painting sessions, and related campus activities will round out the program.

Faculty will consist of Norman Daly, a member of the Department of Fine Arts, and Dick Rutkowski, a visiting artist. Other members of the faculty of the Studios in Art program will give weekly critique sessions throughout the program.

Inquiries and requests for application forms should be addressed to Summer Art Studios, Coordinator of High School Program, B-20 Ives Hall, Cornell University, Ithaca, New York 14850.

## Theatre Arts

The summer program of the Department of Theatre Arts is organized to present a variety of perspectives on the contemporary and classic theatre. The course offerings, as well as the production work on the summer season of plays, and the final production of these plays in repertory have been designed as an integrated experience of the contemporary and classic theatre. In addition to the Summer Repertory Theatre, the Department of Theatre Arts is presenting a Summer Dance Program and a Film Production Studio.

### SUMMER THEATRE

The Cornell Summer Repertory Theatre is composed of professional actors and graduate and undergraduate student actors under the direction of the University Theatre staff. This company will offer a summer season of contemporary and classic drama chosen from such plays as *Oh, What a Lovely War*, Wilde's *The Importance of Being Earnest*, Kopit's *Indians*, Fieffer's *Little Murders*, and Turgenev's *A Month in the Country*.

For further information write to Professor James H. Clancy, Lincoln Hall, Cornell University, Ithaca, New York 14850.

The courses listed below are offered by the Department of Theatre Arts and complete descriptions of them can be found on pp. 70-71.



Th. Arts 280. BEGINNING ACTING (U,G)

Th. Arts 300. DIRECTED STUDIES (U,G)

Th. Arts 343. WAR AND PEACE AS DRAMATIC  
THEMES (U, G)

Th. Arts 344. BRECHT AND THE ABSURDISTS:  
TWO APPROACHES TO MODERN THEATRE  
(U,G)

### *SUMMER DANCE PROGRAM*

June 30–August 13

The six-week Summer Dance Program at Cornell will include a variety of unique opportunities for both the novice and the advanced dance student. Daily modern technique classes will be offered as well as courses emphasizing other elements of dance. These courses will be taught by highly qualified dancers, including a member of the Cornell dance faculty and a guest artist.

Although presentation of a formal concert is not an objective of the program, ample performing opportunities will be provided in studio performances and spontaneous campus improvisations. Studio space will be available for students wishing to choreograph during the session.

The dance courses are noncredit. However, if an individual desires to receive credit, he may register for Theatre Arts 300, Directed Studies. Enrollment in this course and number of credits to be earned must then be arranged with the instructor's approval. See listing on p. 70.

For information and application forms write to Summer Dance Program, B-20 Ives Hall, Cornell University, Ithaca, New York 14850.

### *FILM PRODUCTION STUDIO*

June 30–August 13

The Department of Theatre Arts will produce a feature-length film to be conceived and directed by a professional independent filmmaker. The filmmaker and professional technicians will be visiting artists, supplementing the regular staff of the Department's cinema division. A limit of thirty students will be permitted to participate in the production aspects of the film.

During the 1970 session filmmaker/artist Ed Emshwiller directed a 103-minute feature entitled *Branches* which was exhibited publicly at a professional theatre during the final two days of the course. Since that time the film has been exhibited at the Rochester International Film Festival, the British Film Institute Festival, and numerous colleges and universities, and has received wide critical acclaim.

Although an exact description of the 1971 film is not possible at this time, the character of the film can be defined as "experimental, purely cinematic, and having no relation to the commercial constraints of the motion picture industry." The Ithaca area affords an outstanding variety of sites for location shooting and has supported a major motion picture company during the heyday of the silent serials.

Students taking part in the program will be given the opportunity to work directly with the professional filmmaker and to observe and participate in a wide variety of filmmaking activities from screen tests to preparing for the final print.

Students interested in this program should write for application forms to enroll in the following course.

**\*Th. Arts. 370. FILM PRODUCTION STUDIO (U,G)**  
Six hours credit. *June 30 to August 13*. Enrollment limited to 30 students. Special application form required. M T W Th F 9-12 and other studio hours (mornings, afternoons, and evenings.) Lincoln B-1 and other film facilities. Mr. Beck and visiting artists.

An intensive studio program in which students will be involved with the process of professional filmmaking. A professional filmmaker and staff of experienced technicians will be in residence to produce an independent film during the term. Students will participate in the various phases of filmmaking and will observe at first hand the style and technique of the visiting artist. Because of the extensive time involvement required, it is requested that students register for this course only. Fee, \$20.

Special application forms and further information are available from Professor Gordon Beck, 112 Lincoln Hall, Cornell University, Ithaca, New York 14850. Students wishing to be assured of space should return the special applications no later than May 31.

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## CORNELL UNIVERSITY ANNOUNCEMENTS

The Cornell *Announcements* are designed to give prospective students and others information about the University. The prospective student should have a copy of the *Announcement of General Information*; after consulting that, he may wish to write for one or more of the following *Announcements*:

- New York State College of Agriculture
- College of Architecture, Art, and Planning
- College of Arts and Sciences
- Department of Asian Studies
- Education
- College of Engineering
- School of Hotel Administration
- New York State College of Human Ecology
- New York State School of Industrial and Labor Relations
- Center for International Studies
- Officer Education (ROTC)
- Summer Session

Undergraduate preparation in a recognized college or university is required for admission to certain Cornell divisions, for which the following *Announcements* are available:

- Graduate School: Biological Sciences
- Graduate School: Humanities
- Graduate School: Physical Sciences
- Graduate School: Social Sciences
- Law School
- Veterinary College
- Graduate School of Business and Public Administration
- Graduate School of Nutrition
- Medical College (New York City)
- Cornell University-New York Hospital School of Nursing (New York City)
- Graduate School of Medical Sciences (New York City)

Requests for the publications listed above may be addressed to  
CORNELL UNIVERSITY ANNOUNCEMENTS  
Edmund Ezra Day Hall, Ithaca, New York 14850

(The writer should include his zip code.)

## INSTRUCTIONS FOR APPLYING FOR ADMISSION

Please complete both sides of the application form below; be sure to give all information requested.

A \$10 nonrefundable application fee is required of all applicants (except matriculants of Cornell University as undergraduate or graduate degree candidates) and must accompany this application. Checks should be made payable to Cornell University. Mail the application, together with the \$10 fee, to the Dean of Summer Session, B-20 Ives Hall, Cornell University, Ithaca, New York 14850.

If possible, applications should be submitted prior to June 22. Applications will be accepted after June 22, but, in this case, registration material cannot be mailed out and a place in class cannot be guaranteed. These applicants should pick up their registration materials at registration on June 30. Priority for individual course enrollment is given in the order in which applications are received. See pp. 7-15 for additional information.

Please tear along perforations

### CORNELL UNIVERSITY SUMMER SESSION 1971

#### APPLICATION FOR ADMISSION JUNE 30 TO AUGUST 13

Mr. \_\_\_\_\_  
Mrs. \_\_\_\_\_  
Miss \_\_\_\_\_  
(Last name) (First name) (Middle name)

Present Address \_\_\_\_\_  
(Street and number)

(City) (State) (Zip code)

Home Address \_\_\_\_\_  
(Street and number)

(City) (State) (Zip code)

OFFICIAL USE ONLY!

U  
G  
S  
H

PLEASE INDICATE WHICH ADDRESS TO USE AFTER JUNE 1.

State country of citizenship if not U.S. citizen \_\_\_\_\_

COMPLETE THE OTHER SIDE OF THIS APPLICATION IN FULL.

Leave the following spaces blank:

Please turn page.

Rev'd

Rec'd

Sent

\$10 fee: rec'd \_\_\_\_\_ not required \_\_\_\_\_

## INSTRUCTIONS: ADMISSION APPLICATION AND COURSE PROGRAM

**Course Program:** On the application form below list the courses you wish to take. These must be selected from the *Announcement of the Summer Session, 1971*. Students are expected to enroll for a minimum of three credit hours in the six-week session. Programs of more than eight credit hours must be approved by the Dean of Summer Session.

Undergraduate applicants are urged to consult the appropriate officials in their own colleges in planning their course programs to ensure that the credit they earn will be accepted toward their degree programs. Students lacking necessary prerequisites will be admitted to courses only by special permission of the course instructor.

### FOR UNDERGRADUATES ADMITTED TO CORNELL ONLY

If the institution in which you are now enrolled or to which you have been admitted is Cornell University, the statement of approval which appears on the application form below must be signed by the appropriate University official (see p. 11 for approved list). This applies only to undergraduate degree candidates and is not required of graduate students.

Tear along perforations

I am enrolled in (college/university) \_\_\_\_\_  
as a candidate in good standing for:

☐ Undergraduate degree.

☐ Graduate degree. Degree sought \_\_\_\_\_

☐ I am a high school graduate accepted for admission to  
(college/university): \_\_\_\_\_

*Special Student:* Number years of college completed \_\_\_\_\_ Degree, (if any) \_\_\_\_\_

School last attended \_\_\_\_\_ When? \_\_\_\_\_

Present employer \_\_\_\_\_

Position held \_\_\_\_\_

List your complete program indicating the departmental abbreviation, course number, course title, credit hours, and class meeting time for each course.

Dept. Abbrev.	Course No.	Title of Course	Credit Hours	Meeting Time

Registration approval: CORNELL UNDERGRADUATES ONLY

Signature \_\_\_\_\_

Official Title \_\_\_\_\_